

EPA Region 5 Records Ctr.



244357

**Five-Year Review Report**  
**Second Five-Year Review Report**  
**for**  
**Spickler Landfill**  
**Town of Spencer**  
**Marathon County, Wisconsin**  
**September 2005**

**PREPARED BY:**

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# Five-Year Review Report

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## **List of Acronyms**

<b>AOC</b>	<b>Administrative Order on Consent</b>
<b>ARAR</b>	<b>Applicable or Relevant and Appropriate Requirement</b>
<b>CERCLA</b>	<b>Comprehensive Environmental Response, Compensation, and Liability Act</b>
<b>EPA</b>	<b>United States Environmental Protection Agency</b>
<b>ES</b>	<b>Enforcement Standard per Wisconsin Administrative Code NR 140</b>
<b>CFR</b>	<b>Code of Federal Regulations</b>
<b>HI</b>	<b>Hazard Index</b>
<b>LEL</b>	<b>Lower Explosive Limit</b>
<b>LTGWM</b>	<b>Long-term Groundwater Monitoring</b>
<b>MCL</b>	<b>Maximum Contaminant Level</b>
<b>NCP</b>	<b>National Contingency Plan</b>
<b>NPL</b>	<b>National Priorities List</b>
<b>O&amp;F</b>	<b>Operational &amp; Functional</b>
<b>O&amp;M</b>	<b>Operation and Maintenance</b>
<b>OU</b>	<b>Operable Unit</b>
<b>PAH</b>	<b>Polynuclear Aromatic Hydrocarbon</b>
<b>PAL</b>	<b>Preventive Action Limit per Wisconsin Administrative Code NR 140</b>
<b>PCE</b>	<b>Perchloroethylene, also known as Tetrachloroethylene</b>
<b>RP</b>	<b>Responsible Party</b>
<b>RA</b>	<b>Remedial Action</b>
<b>RD</b>	<b>Remedial Design</b>
<b>RI/FS</b>	<b>Remedial Investigation/Feasibility Study</b>
<b>RPM</b>	<b>Remedial Project Manager</b>
<b>ROD</b>	<b>Record of Decision</b>
<b>SDWA</b>	<b>Safe Drinking Water Act</b>
<b>TCE</b>	<b>Trichloroethylene</b>
<b>UAO</b>	<b>Unilateral Administrative Order</b>
<b>VOC</b>	<b>Volatile Organic Compound</b>
<b>WAC</b>	<b>Wisconsin Administrative Code</b>
<b>WDNR</b>	<b>Wisconsin Department of Natural Resources</b>

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## **Executive Summary**

The remedy for the Spickler Landfill site in the Town of Spencer, Marathon County, Wisconsin included construction of a cap over two waste areas and one mercury brine pit; a gas extraction system with off-gas treatment; a leachate collection system with off-site treatment of the leachate; site fencing; monitoring of groundwater, landfill gas, and drinking water; and institutional controls. The site achieved remedial construction completion when the operable unit #2 (OU#2) groundwater remedy was determined to be "no further action" in a Record of Decision (ROD) issued on September 28, 1998. The trigger for this second five-year review was the completion of the first five-year review in September 2000.

The assessment of this five-year review found that the remedy was constructed in substantial accordance with the requirements of the RODs for OU#1 and OU#2. In 2000, the gas extraction system was modified to operate continuously without flaring.

The remedy at Spickler Landfill OU#1 currently protects human health and the environment. The landfill caps, gas extraction system, leachate collection system, groundwater and gas monitoring, fencing, and deed restriction were constructed and are in place as required and control exposure pathways that could result in unacceptable risks. For the remedy to be protective in the long-term, the status of groundwater contamination on the property south of the site must be determined, and an institutional control implemented if necessary. The OU#2 no further action remedy decision will also be protective in the long-term when groundwater quality on the south property is further evaluated and an appropriate institutional control placed if necessary.

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## Five-Year Review Summary Form

SITE IDENTIFICATION		
<b>Site name:</b> Spickler Landfill		
<b>EPA ID:</b> WID980902969		
<b>Region:</b> V	<b>State:</b> WI	<b>City/County:</b> Spencer/ Marathon
SITE STATUS		
<b>NPL status:</b> Final		
<b>Remediation status</b> (choose all that apply): Construction Complete		
<b>Multiple OUs?*</b> YES	<b>Construction completion date:</b> 09 / 29 / 1998	
<b>Has site been put into reuse?</b> NO		
REVIEW STATUS		
<b>Lead agency:</b> U.S. Environmental Protection Agency (EPA)		
<b>Author name:</b> Eileen Kramer		
<b>Author title:</b> Hydrogeologist/Project Manager	<b>Author affiliation:</b> Wisc. Dept. of Natural Resources	
<b>Review period:**</b> 04 / 19 / 2005 to 09 / 28 / 2005		
<b>Date(s) of site inspection:</b> 04 / 19 / 2005		
<b>Type of review:</b> Post-SARA		
<b>Review number:</b> 2 (second)		
<b>Triggering action:</b> Previous Five-Year Review Report		
<b>Triggering action date (from WasteLAN):</b> 09 / 28 / 2000		
<b>Due date (five years after triggering action date):</b> 09 / 28 / 2005		

\* ["OU" refers to operable unit.]

\*\* [Review period should correspond to the actual start and end dates of the Five-Year Review in WasteLAN.]



## **Five-Year Review Summary Form, cont'd.**

### **Issues:**

1. Groundwater quality on property south of the site is unknown.
2. High methane levels at west edge of site.
3. Review has not been done to confirm whether 1998 deed restriction meets current requirements.
4. No plan to monitor compliance with deed restriction.

### **Recommendations and Follow-up Actions:**

1. Determine whether property south of landfill is impacted by installation of a monitoring well nest that may be abandoned after four sample events if clean.
2. Add MW-14S to gas monitoring network.
3. Do review of document filed in 1998 to ascertain it meets current EPA requirements.
4. Develop and implement plan to monitor compliance.

### **Protectiveness Statement(s):**

The remedy at Spickler Landfill OU#1 currently protects human health and the environment. The landfill caps, gas extraction system, leachate collection system, groundwater and gas monitoring, fencing, and deed restriction are in place and control the exposure pathways that could result in unacceptable risks. For the remedy to be protective in the long-term, the status of groundwater contamination on the property south of the site must be determined, and an institutional control implemented if necessary. The OU#2 no further action remedy decision will also be protective in the long-term when groundwater quality on the south property is determined and appropriate institutional control placed if necessary.

### **Other Comments:**

# Five-Year Review Report

## I. Introduction

### The Purpose of the Review

The purpose of five-year reviews is to determine whether the remedy at a site is expected to be protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in five-year review reports. In addition, five-year review reports identify issues found during the review, if any, and recommendations to address them.

### Authority for Conducting the Five-Year Review

The Wisconsin Department of Natural Resources is preparing this five-year review pursuant to CERCLA §121 and the National Contingency Plan (NCP). CERCLA §121 states:

*If the President selects a remedial action that results in any hazardous substances, pollutants, or contaminants remaining at the site, the President shall review such remedial action no less often than each five years after the initiation of such remedial action to assure that human health and the environment are being protected by the remedial action being implemented. In addition, if upon such review it is the judgment of the President that action is appropriate at such site in accordance with section [104] or [106], the President shall take or require such action. The President shall report to the Congress a list of facilities for which such review is required, the results of all such reviews, and any actions taken as a result of such reviews.*

The EPA interpreted this requirement further in the National Contingency Plan (NCP); 40 CFR §300.430(f)(4)(ii) states:

*If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure, the lead agency shall review such action no less often than every five years after the initiation of the selected remedial action*

### Who Conducted the Five-Year Review

The Wisconsin Department of Natural Resources (WDNR) has conducted a five-year review of the remedial actions implemented at the Spickler site in Spencer, Marathon County, Wisconsin. This review was conducted from April 2005 through September 2005. This report documents the results of the review. The five-year review site inspection was conducted by the WDNR, with the participation of the EPA remedial project manager, a representative of the responsible party (RP), Weyerhaeuser, and a representative of the RP's contractor, STS Consultants.

### Other Review Characteristics

This is the second five-year review for the Spickler Landfill Superfund (Spickler) site. The triggering action for this review is the date of the first five-year review, September 28, 2000. This five-year review is required because the selected remedial action results in hazardous substances remaining at the site above levels that allow for unlimited use and unrestricted

exposure.

## II. Site Chronology

**Table 1: Chronology of Site Events**

Event	Date
Hazard Ranking System assessment conducted	June 1984
National Priorities List listing	July 7, 1987
Administrative Order on Consent (AOC) for the Remedial Investigation/Feasibility Study (RI/FS) signed by Potentially Responsible Parties (RPs) and EPA. RI/FS started by RP consultant	July 16, 1988
RI/FS complete	June 1992
OU#1 ROD signature	June 3, 1992
AOC for Remedial Design (RD) signed by RPs and EPA	August 1992
RD complete	December 1993
Unilateral Administrative Order (UAO) issued to RPs for Remedial Action (RA)	February 1, 1994
RA initiated by RP contractor	April 1994
EPA site visit to confirm completion of physical construction	December 19, 1994
EPA and WDNR approve RA documents; OU#1 remedy operational and functional	September 28, 1995
OU#2 ROD signed by EPA (OU#2 ROD also serves as site Preliminary Close-Out Report.)	September 29, 1998
First five-year review report signed by EPA	September 28, 2000
Second five-year review begun	April 19, 2005

### **III. Background**

#### **Physical Characteristics**

The Spickler Landfill Superfund site (the "site") is located in a sparsely populated rural area in the northwest ¼ of the southeast ¼ of Section 33, Township 26 North, Range 2 East, at S-2550 Eckes Road in the Town of Spencer, Marathon County, Wisconsin (see Figure 1). The site is located on an eighty-acre parcel of land and consists of a ten-acre landfill with two fill areas (Old and New Fill areas), separated by a crude oil pipeline right-of-way (see Figure 2).

Depth to groundwater in the area of the landfill is approximately five to ten feet. The nearest communities include the Town of Spencer, approximately 4 miles to the northwest, and the City of Marshfield, approximately 4 miles to the southeast. Sampling of eight residential wells within a half-mile of the site was conducted during the remedial investigation but no evidence of contamination in the residential wells was found. One residence that was located on the landfill property, directly west of the waste no longer exists. Two residences are located across Eckes Road, west (down-gradient) of the site, and are sampled semi-annually.

#### **Land and Resource Use**

Land use in the area is predominantly agricultural and there are no known plans for or indications of significant change or development. Two private residences are in close proximity to the site. The residences obtain drinking water from privately owned water supply wells, and are located approximately 400 feet west (down-gradient) of the waste.

#### **History of Contamination**

The Spickler Landfill operated as a municipal open dump and accepted municipal and industrial wastes from July 1970 to March 1974. In December 1970, BASF Wyandotte received approval from the WDNR to construct an approximately 100 by 100 foot, 10-foot deep clay-lined sludge disposal area (the "mercury brine pit") at the landfill. The mercury brine pit was used from January to April 1971, received mercury brine muds, and was eventually closed with a clay cap and posted monuments (concrete posts) in September 1971. Between August 1972 and late 1975 the property was owned and/or operated by several different individuals and was cited by WDNR for violations such as failure to perform daily cover operations and ineffective drainage control.

#### **Initial Response**

During the mid-1970s, WDNR ordered the termination of operation and closure of the landfill. Between March 1974 and February 1975, initial closure and abandonment work was performed. Other industrial wastes known to have been disposed in the Spickler Landfill include: kalo dust which contained asbestos, toluene, xylenes, methyl-ethyl ketone, and methylene chloride.

On June 20, 1984, a Hazard Ranking System assessment was conducted by the EPA and noted that areas of leachate seepage occurred on both the north and south faces of the New Fill Area and that the mercury brine pit had subsided and was collecting surface water. Soil samples from landfill seeps were found to contain traces of mercury, and groundwater samples contained both organic and inorganic contaminants. In July 1987, the Spickler Landfill was placed on the National Priorities List (NPL). The Remedial Investigation and Feasibility Study

(RI/FS) was conducted between July 1988 and June 1992. A chronology of events for the Spickler Landfill site is shown as Table 1.

#### Basis for Taking Action

The RI found explosive levels of landfill gas in several on-site monitoring wells and gas probes, a significant amount of leachate accumulation, and groundwater samples containing benzene, vinyl chloride and barium in exceedance of Federal Maximum Contaminant Levels.

The risk assessment for the site considered: the potential for exposure to contaminants through inhalation of air, incidental ingestion of disturbed site soil, future exposure to on-site borrow pit surface water and sediment, future exposure to seep sediment, and the potential risk associated with future use of groundwater. Non-cancer health risk is represented by the Hazard Index (or HI) which when greater than 1 represents a potential for health problems such as damage to vital organs, birth defects, and anemia and other blood disorders. The HI for the total non-cancer health risk at the site (mainly from groundwater ingestion) in a residential scenario was determined to be 32. This HI was associated with the potential exposure to arsenic, barium, lead, manganese, and nitrites detected in groundwater. The excess cancer health risk calculated for the site was  $3.01 \times 10^{-3}$ , which is outside the acceptable risk range. This cancer risk was mainly associated with potential groundwater exposure to vinyl chloride and arsenic. Effects of the landfill or hazardous components of the fill were not readily discernible on the ecology in the immediate vicinity of the site. Areas of stressed vegetation, possibly attributable to the landfill, were not noted.

### **IV. Remedial Actions**

Response at the site was divided into two operable units. Operable unit (OU) #1 addresses closure of the mercury brine pit and the landfill, landfill gas control, leachate extraction and treatment, and groundwater monitoring. OU#2 consists of a final remedy decision for groundwater.

#### Remedy Selection for OU#1

The ROD for OU#1 was signed by EPA on June 3, 1992.

The site-specific goals of the OU#1 remedy were:

- (1) Reduce the rate at which contaminants from the waste mass enter the groundwater by drastic limitation of precipitation infiltration;
- (2) Collect any leachate that may be produced for treatment at a licensed water treatment facility;
- (3) Abate landfill gas which may be produced to insure that nearby buildings are protected from the potential of explosion; and
- (4) Monitor site groundwater on a long term basis<sup>2</sup> (at least 30 years) to insure that the levels of contaminants attain and remain at or below State of Wisconsin Preventive Action Limits (PALs) as outlined in Wisconsin Administrative Code (WAC), Chapter NR 140.

The major components of the OU#1 remedy included:

- (1) Solidification and stabilization of the contents of the mercury brine pit, followed by installation and maintenance of an impermeable cap over the mercury brine pit area in accordance with WAC Ch. NR660;

- (2) Installation and maintenance of a solid waste cap meeting requirements of WAC Ch. NR504 over the New and Old Fill areas (excluding the mercury brine pit);
- (3) Installation and maintenance of a leachate collection system and implementation of off-site treatment;
- (4) Installation and maintenance of an active landfill gas collection system;
- (5) Long term monitoring of groundwater, landfill gas and leachate, and regular inspections of the fence and landfill caps; and
- (6) Recording of a deed restriction on the property prohibiting drinking water wells and construction on the landfill itself.

### Remedy Selection for OU#2

OU#2 was intended to address an active remedy for the groundwater contamination if necessary. Because of the successful performance of the OU#1 remedy in reducing discharge of contaminants from the waste and leachate into the groundwater, EPA, with concurrence of WDNR, determined that no additional active groundwater restoration work was necessary. However, it was also determined that additional investigative work is necessary. On September 29, 1998, EPA issued an OU#2 ROD that established no further action was needed at the site beyond the requirements of the OU#1 remedy. WDNR's concurrence letter of June 3, 1999, clarified that additional groundwater investigation in the vicinity of MW-S1 and MW-S1AR shall be performed under OU#1.

Because of shallow depth of site groundwater, the leachate collection system has assisted in reduction of contaminant levels in site groundwater. Upgrade of the landfill cap has eliminated threats associated with direct contact with contaminated soils. The upgraded cap has also reduced improper surface accumulation of precipitation and leaching of water through fill material, which has minimized off-site migration of contaminated groundwater.

The OU#2 decision was based on: (1) an analysis of site risks, (2) the successful construction of the OU#1 remedy, (3) the demonstration by long term groundwater monitoring that contaminant concentrations at the site remained at constant levels for approximately 7 years, (4) legal assurance (required for OU#1) that contaminated land will not be used in a way that could pose significant risks, and (5) continuance of groundwater monitoring until it is clear that groundwater contamination has attenuated. As documented in the OU#2 ROD, 31 of the original 47 chemicals of potential concern identified in the OU#1 ROD were not consistently detected during the design, construction, or operation of the OU#1 remedy and thus no longer pose any threat. Issuance of the OU#2 ROD serves the same purpose as a Preliminary Close-Out Report for the site. Site work will not be completed until successful achievement of cleanup goals is demonstrated on a long-term basis (at least 30 years).

### Remedy Implementation for OU#1

The remedial design for OU#1 was completed by the RP's consultant between September 1992 and December 1993. The UAO for RA construction was issued on February 1, 1994.

In April 1994, construction of the OU#1 remedy by the RP contractors and consultant began. A two-phase approach was used for construction of the remedy. The first phase consisted of the following:

- (1) installation of leachate removal piping, lift stations, and collection tank,
- (2) installation of the gas collection piping,
- (3) preparation of base grades for the landfill caps,

- (4) installation of the electrical system, and
- (5) execution of the institutional controls.

Concurrent with this first phase activity, the RP consultant developed drawings and specifications for the second phase construction, which included:

- (1) installation of the gas extraction blower/flare station,
- (2) placement of the final cover on the old and new fill areas, and
- (3) placement of the brine pit cover.

Throughout construction, quality assurance procedures were followed in accordance with EPA and WDNR approved work plans. For the leachate collection system, all leachate piping was pressure-tested after installation to insure conformance with design specifications. The leachate collection tank was factory leak- and pressure-tested before installation. Landfill gas collection piping was similarly pressure-tested. The landfill gas flare was designed and provided by an incineration manufacturer.

All clay materials used in the landfill cap were obtained from the same WDNR-approved borrow source as was used for the nearby Mid-State Disposal Superfund site. The clay was subject to testing for Atterberg limits, grain size distribution, hydraulic conductivity, in-place density, and moisture-density relationship to insure compliance with design specifications. A registered professional engineer was on site on a nearly full time basis as the construction manager. As the cap was installed, placement of the fill material, clay, and geotextile and geomembrane was observed and documented by a field technician. Geotextile and geomembrane materials were tested prior to installation. Test results are included in the document "Final Construction Completion Report" dated August 11, 1995.

Minor deviations from the RD drawings and specifications were proposed by the RPs to EPA and WDNR (the "Agencies") and were implemented after EPA and WDNR review and approval. EPA, through the use of an oversight contractor, was present for construction activity and was apprised regularly of site progress. WDNR visited the site periodically and reported any concerns to the RP consultant and EPA as appropriate. The RP consultant provided monthly progress reports in accordance with approved work plans and the UAO.

Completion of physical construction was certified by the RP consultant on October 7, 1994, who immediately served notice to EPA and WDNR. EPA was apprised of imminent completion several weeks prior to this certification, and, through contract oversight personnel, confirmed that all construction was performed in accordance with design specifications. On December 19, 1994, EPA was on site with representatives from the RP consultant, the EPA oversight contractor, and a technical representative from the RP group. The intent of this site visit was to perform a final walk-through to satisfy pre-certification inspection requirements. After inspection of the overall site conditions, all punch list items were addressed. There were no physical construction deficiencies noted by EPA. WDNR was notified of this inspection, but did not attend and had regularly been on site prior to the certification. WDNR had no major incomplete work items other than final documentation and defining the scope of long term site monitoring.

Declaration of the operational and functional (O&F) status of the remedy was provided in a letter from EPA (with WDNR concurrence) dated September 28, 1995. According to 40 CFR Section 300.435, a remedy is operational and functional "...either one year after construction is complete, or when the remedy is determined concurrently by EPA and the State to be functioning properly and is performing as designed." Construction was certified complete by the RP consultant on October 7, 1994, ending the one-year period on October 7, 1995. During the

week of September 25, 1995, WDNR provided verbal concurrence with the O&F determination and the Remedial Action Report was signed by EPA Region 5 on September 28, 1995. Details of construction activity are provided in the document "Final Construction Completion Report" dated August 11, 1995. At the time of the RA report, the remedy had been operating for nearly one year with no notable operational problems.

Currently, the landfill caps remain in place and in good condition, leachate collection and off-site treatment are on going, groundwater monitoring continues, and access and institutional controls are in place. The implementation of the gas extraction system has been modified to eliminate the flare, and to run the blower continuously.

#### Remedy Implementation for OU#2

As previously noted, no construction was required by the OU#2 "no further action" ROD.

#### Operation and Maintenance (O&M)

An operation and maintenance (O&M) plan was submitted and was approved by the Agencies on September 28, 1995. O&M activities consist of:

- (1) O&M of landfill cover, including revegetation as needed, mowing, and regular inspection for cover integrity and/or burrowing animals,
- (2) Long-term groundwater sampling and analysis, including maintenance of the monitoring wells and associated structures,
- (3) O&M of the landfill gas collection and flare system, including clean out of collection piping as needed,
- (4) O&M of the leachate collection system, including hauling of leachate and clean out of piping as needed, and
- (5) Maintenance of the drainage system and access roads around the site as needed.

Annual costs for O&M were estimated in the OU#1 ROD at approximately \$113,000, including sampling and analysis, leachate collection, maintenance of the landfill gas and leachate collection systems, flare system, and miscellaneous administrative costs.

Table 2 presents actual annual O&M expenditures. This information was furnished by STS Consultants. The amounts in Table 2 do not include laboratory analytical services nor leachate treatment as costs for these services were incurred directly by the RP.

**Table 2: Annual System Operations/O&M Costs**

Dates		Total Cost rounded to nearest \$1,000
From	To	
Jan 2000	Dec 2000	\$70,000
Jan 2001	Dec 2001	\$93,000
Jan 2002	Dec 2002	\$80,000
Jan 2003	Dec 2003	\$90,000
Jan 2004	Dec 2004	\$104,000



## V. Progress Since the Last Review

The 2000 five-year review concluded that the OU#1 remedy at this site remained protective of human health and the environment, with the condition that the report recommendations be implemented.

Table 3 below summarizes responses to the recommendation of the last five-year review.

**Table 3: Actions Taken Since the Last Five-Year Review**

Issues from Previous Review	Recommendations/ Follow-up Actions	Action Taken and Outcome	Date of Action
Additional monitoring wells	Wells to be constructed south, southeast and northwest of site.	STS letter to Agencies providing rationale for a new well nest only south of landfill. (Previously, in a letter dated Sept. 11, 1996, the RP had requested access from the landowner to the south.)	7/16/2001
LTGWM Program	Evaluated and modified as justified.	Agencies approved elimination of non-detected parameters, and program modified.	2000
Gas extraction system	Modify operation to by-pass flare.	Flare by-passed and extraction system operated continuously. Some shutdowns due to liquids in collection piping have occurred.	2000-2004
Extracted gas monitoring	Monitor quarterly for one year, and annually thereafter.	Monitoring performed as required. All emissions are well below standards	2000-2004
Gas collection piping	Re-set portion that has settled and collects liquids.	STS presented rationale for not needing to perform this work. Agencies suspended this requirement. Liquids accumulation has been dealt with by blowing out the system with compressed air. In 2004 achieved system operation 315 days.	2000-2004
Leachate tank	Test cathodic leak protection.	Initial test performed with unsatisfactory results (2001). Following several upgrades and repairs, test results were satisfactory.	2001-2004

Most of the issues from the previous review have been satisfactorily addressed. Construction of a monitoring well nest south of the site remains to be completed. The Agencies and RP will make every effort to work with the landowner and consider different approaches to gain agreement to install the well nest. Failing voluntary access agreement from the landowner, the Agencies may need to evaluate regulatory options against the landowner to gain access.

## VI. Five-Year Review Process

### Administrative Components

WDNR and EPA staff met with representatives of the Weyerhaeuser Corporation on April 19, 2005, to notify them of the initiation of the second five-year review. This five-year review for the Spickler Landfill was conducted by Eileen Kramer of the WDNR.

From April 19, 2005 to September 28, 2005, the reviewer established a review schedule, which included:

- Community Involvement;

- Document and Data Review;
- Site Inspection;
- Local Interviews; and
- Five-Year Review Report Development and Review.

### Community Notification and Involvement

Activities to involve the community in the process included a public notice prepared by the WDNR and published in two local newspapers that a five-year review was to be conducted at the Spickler Landfill Site. The notices were published in the local daily, *The Marshfield News Herald* and the weekly, *Tribune Record Gleaner*. The notice invited members of the public to submit any comments to the reviewer at WDNR. There were no responses to the public notice.

Three interviews with members of the public were conducted, one with the resident south-southeast of the site, one with a Marathon County zoning staff person, and one with a Town of Spencer Supervisor. None of the interviews revealed any concerns with the current activities at the site. Additional discussion of the interviews is presented on page 22 of this report.

### Document Review

This five-year review included a review of relevant documents including the RODs for both operable units, operations and maintenance (O&M) records and monitoring data. Applicable groundwater cleanup standards were reviewed. A list of documents reviewed is attached.

### Data Review

#### **Groundwater Monitoring**

Long-term groundwater monitoring (LTGWM) at the Spickler Landfill Site has been conducted in accordance with the Final Long-Term Groundwater Monitoring Plan, dated November 3, 1995, and as revised subsequent to the 2000 five-year review report. Twenty groundwater monitoring wells are sampled semi-annually. In addition, two residential wells west of the site are sampled semi-annually.

For this report, groundwater data reported by the RP's consultant, STS Consultants, Ltd. (STS) was reviewed, as well as groundwater data contained on the WDNR's computerized data base, Groundwater Environmental Monitoring System (GEMS).

Water table elevations at the site are generally observed to be between five and 20 feet below ground surface. Water levels in piezometers are generally lower than in corresponding water table wells, demonstrating a downward vertical gradient in groundwater flow. Regional groundwater flow is toward the west, although there are local variations.

In general, contaminant concentrations associated with this site are relatively low. During the 2000–2004 period of time covered by this five-year review, three monitoring wells (S1AR, S3AR and MW-6S), have had detects of VOCs greater than the WAC Ch. NR140 Enforcement Standard (ES). For the same period, VOCs have been detected at concentrations greater than the PALs in eight monitoring wells; however, two of those wells had one-time only detects.

Since 1997, when Spickler groundwater data became available on the WDNR's electronic database, VOCs greater than PALs have not been detected in any off-site monitoring wells, with

one exception. During one sampling event (March 2002), dichloromethane was detected at greater than the PAL, but below the ES, in MW-15D, south of the Old Fill Area.

MW-14S and MW-14D, located off-site and between the landfill and one of the down-gradient residences, have had no detects of VOCs since the beginning of the long-term groundwater monitoring program in 1996.

Impacted monitoring wells have shown either stable or decreasing concentrations of VOCs during the LTGWM program. Vinyl chloride, the substance that presents the greatest health threat via the groundwater pathway, has decreased in concentrations in S1AR, which is located immediately south of the New Fill Area and north of the neighboring agricultural property. The southerly extent of contamination observed in this monitoring well is not known. Vinyl chloride concentrations have remained stable in S3AR (north of the Old Fill Area) and MW-6S (northwest of the Old Fill Area and close to the site property line). MW-20S, which is down- and side-gradient of MW-6, has had no unqualified detects of VOCs since the beginning of the LTGWM program.

Arsenic has been detected at concentrations greater than the PAL more than once in two monitoring wells, S1AR and MW-19S. In S1AR, the highest arsenic concentration was 41 ppb in March 1999, and the most recent was 10 ppb in September 2004. In MW-19S the high concentration was 6.8 ppb in September 1996, and most recent 3 ppb.

This groundwater data suggests that remedy components installed at the site are effective in reduction of discharge of contaminants to the groundwater and of threats identified in the OU#1 ROD. Concentrations of contaminants are not increasing, and in some cases are decreasing. Continued long term groundwater monitoring will confirm the containment capability for most of the site and also ensure that potential degradation of site conditions will be foreseen and addressed before migration off-site occurs.

Groundwater monitoring should be continued until site clean-up levels are attained. An additional monitoring well nest should be constructed south of the site, substantially as proposed by the RP consultant in a letter dated July 16, 2001. The well nest could potentially be constructed, sampled for four rounds, and abandoned if the wells are clean. The owner of the property to the south has indicated that he does not want a well nest constructed on his property. The agencies and RP will make every effort to gain the landowner's agreement to the well nest. Failing the owner's voluntary access permission, however, the agencies should evaluate and implement regulatory options.

Two residential wells located west of the site are monitored semi-annually as part of the LTGWM program. VOCs associated with the site have not been detected in any of the 17 sampling rounds in either well, except for a one-time detect of chloromethane, which was not confirmed by follow-up sampling by the WDNR.

#### **Gas Extraction System**

The gas extraction system consists of perimeter and interior collection trenches, and a blower and flare. During early operations it was determined that there were inadequate combustible gases to sustain a continuous flare, and the system was operated periodically. It was later determined that flaring was not necessary in order to meet air quality regulations. As a result, the operation was modified to vent gases directly to the atmosphere. Since March 2000, the system has operated without flaring. Periodically the system has been shutdown by

accumulation of liquids in low areas of the collection header pipe. When this occurs, the problem is addressed by purging the system with compressed air. Operational data for 2000-2004 indicates that the system ran the following percentages of time: 2000 -- 45%; 2001 -- 79%; 2002 -- 53%; 2003 -- 91%; and 2004 -- 86%.

As a condition of the approved modification in 2000, to vent landfill gas directly to the atmosphere, the RP is required to monitor VOC emissions and verify compliance with WAC Ch NR445, which limits emissions of toxic substances to the atmosphere. Review of data submitted by the RP indicates that air emission levels were well below standards in WAC Ch. NR445.

The site has 10 perimeter gas probes, and seven select water table monitoring wells are also sampled for landfill gas. Gas probe GP-6, near the west edge of the waste has had consistently high levels of methane. From 2000-2004 there were 11 gas probe samples collected at GP-6. During eight of those events the lower explosive limit (LEL) for methane was exceeded substantially. It should be noted, though, that overall, the percentage of methane in GP-6 has decreased over the life of the project. GP-5, also at the west edge of the fill area exceeded the methane LEL three times. In GP-5 there has also been a long-term decrease in the percentage of methane present.

The operation of the landfill gas extraction system has reduced the potential for off-site migration of explosive levels of methane. However, gas probe monitoring suggests that there are concentrations of methane on the site of significant concern. Gas probe monitoring also suggests that the potential exists for methane to migrate off-site.

Monitoring well MW-14S is located between the western edge of the site and one of the residences, and should be added to the gas monitoring network. All other gas probe monitoring should continue, and operation of the gas extraction system should be operated continuously.

#### **Leachate Collection System**

The leachate collection systems are intended to reduce the amount of leachate in the landfills and prevent the formation of seeps to the surface and migration of contaminants in the leachate to the groundwater. The Old and New Fill Areas have independent systems consisting of perimeter and interior collection trenches, cleanout stations, forcemains, lift stations, and collection tanks. The brine pit has a perimeter collection trench that gravity drains to the Brine Pit Manhole.

During 2004, the system experienced periodic shutdowns due to sub-surface freezing and springtime road limits. Each instance was responded to in a timely and appropriate manner. The RP's consultant reports that as the system ages, they anticipate problems with relays and controls, and believe these can be adequately dealt with by inspections and communications with contractors who visit the site frequently, (for example, the leachate hauler).

From May 1994 to December 2004, approximately 5.8 million gallons of leachate have been collected, removed from the site, and treated.

#### **Landfill Caps**

O&M activities of the landfill caps performed by the RP consultant include annual inspection, and if necessary, repairs of the cap, vegetation and survey monuments. The landfill cover is mowed twice a year. This frequent mowing schedule has been successful in eliminating the

growth of Canadian thistle and other woody vegetation on the cover. The cover, fencing surrounding the site, surface drainage ways, and access roadway are inspected annually and repaired as needed.

#### **Institutional Controls**

A Declaration of Restrictions for the site property was executed by the property owner on December 18, 1998, and was recorded on December 23, 1998, at the Marathon County Register of Deeds office. The Declaration runs with the land and imposes restrictions as required by the ROD for OU#1.

#### **Site Inspection**

A site inspection was conducted on April 19, 2005, by the EPA Remedial Project Manager (RPM) and the WDNR Project Manager (PM) (See Attachment). A representative of Weyerhaeuser and the RP consultant also participated in the inspection. The purpose of the inspection was to assess the protectiveness of the remedy, including the maintenance and operation of the leachate collection system, gas vent system and flare, the integrity of the caps on the two waste areas and brine pit, the fencing and the condition of the surface water drainage systems and monitoring wells.

No significant problems were identified regarding the caps, the leachate collection system, the gas venting system and flare, the monitoring network, and the perimeter fencing. Vegetation was dense and vibrant. No seeps were observed. No woody growth was observed on the caps. One small animal burrow was noted, which the RP consultant indicated would be repaired in the near future.

Operation of the leachate pumps at the lift stations and leachate tanks was demonstrated satisfactorily. Control panels, manholes, loadout facilities, and alarm systems were observed to be in satisfactory condition.

Site security controls appear to be substantially effective. There was evidence (a ladder leaning against the fence) that the site may have been accessed by the owner of a property neighboring the site. The RP consultant indicated he was acquainted with the party and would advise him of the prohibition against accessing the site. There was no other evidence of unauthorized access to the site (i.e. graffiti, tire tracks, campfires). Fencing around the site was observed to be in good condition with padlocks in use on all gates. Roads were observed to be in good condition.

#### **Interviews**

Interviews were conducted with several members of the community connected to the site. On April 19, 2005, Mr. Mike Heckel, resident and owner of the property immediately south of the site, was interviewed. He expressed no concerns with the current work, but feels injured by the operation of the landfill. He also expressed reluctance to have a monitoring well nest constructed on his property to determine whether groundwater under his property has been impacted by the landfill. Mr. Mark Zimmerman, Town of Spencer Supervisor, was interviewed. Mr. Zimmerman indicated that he was not very familiar with the site and has no concerns about it. He has heard of no concerns or complaints from other residents of the Town.

## VII. Technical Assessment

### Question A: Is the remedy functioning as intended by the decision documents?

The review of documents, ARARs, and the results of the site inspection indicate that the remedy is functioning as intended by the OU#1 ROD. The capping of wastes within the fill areas and brine pit has achieved the remedial objectives of minimizing the migration of contaminants to groundwater and preventing direct contact with, or ingestion of, contaminants in waste materials. Operation and maintenance of the caps, gas extraction and leachate collection systems is, on the whole, effective. Concentrations of contaminants in groundwater are observed to be decreasing. There has been no observed expansion, vertically or laterally, of the plume margin.

### Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of remedy selection still valid?

The exposure assumptions used in the 1991 baseline risk assessment were conservative and remain valid for this site. The remedial action objectives of reducing infiltration through the waste, controlling landfill gases, collecting leachate, and restricting access and future use of the site remain valid. Toxicity data about one of the substances of concern, arsenic, has been revised, and the WDNR has consequently modified its PAL and ES for that substance. During the 2000-2004 period of this review, arsenic was detected on more than one occasion in two monitoring wells, S1AR and MW-19S. Both wells are located on the site, and current concentrations are lower than those observed prior to 2000. Protectiveness of the remedy is not affected by these changes in standards. Based on the data review, these revised standards should be achievable with the existing remedy.

**Table 4: Changes in Chemical-Specific Standards**

Contaminant	Media	Standard		Citation/Year
		Previous		
Arsenic	Groundwater		PAL 5 ppb ES 50 ppb	NR140 August 1995
		New	PAL 1 ppb ES 10 ppb	NR 140 February 2004

### Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

No other information has come to light that could call into question the protectiveness of the remedy. There has been no known impact due to natural disaster. No new receptors have been identified. There has been no new land development of significance.

#### **Technical Assessment Summary**

The answers of Yes to Question A, Yes for the short-term to Question B, and No to Question C support a protectiveness determination that the site is protective in the short-term, but requires additional work to be protective in the long-term.

## VIII. Issues

**Table 5: Issues**

Issues	Affects Current Protectiveness (Y/N)	Affects Future Protectiveness (Y/N)
Groundwater quality on property south of site remains unknown	No	Yes
High methane levels at west edge of site.	No	Yes
Review has not been done to confirm whether 1998 deed restriction meets current requirements.	No	No
No plan to monitor compliance with deed restriction.	No	No

Groundwater quality on the property south of the site may affect future protectiveness if water supply wells were to be installed in that area. Currently the area is in crop with no known development plans.

The high methane levels frequently observed in GP-5 and GP-6 indicate a potential for gas migration to the two residences west of the site. To be protective, a gas monitoring point should be established between the landfill and the residences.

## IX. Recommendations and Follow-up Actions

**Table 6: Recommendations and Follow-up Actions**

Issue	Recommendations and Follow-up Actions	Party Responsible	Over-sight Agency	Mile-stone Date	Affects Protectiveness (Y/N)	
					Current	Future
Ground-water	To determine whether property south of landfill is impacted, construct a monitoring well nest on the property. The well nest may be abandoned after four quarters if clean.	RP	EPA WDNR	September 2007	No	Yes
Gas monitoring	Add MW-14S to gas monitoring network.	RP	EPA WDNR	January 2006	No	Yes
Deed restriction	Do review of document filed in 1998 to ascertain it meets current EPA requirements.	EPA RP	EPA WDNR	September 2006	No	No
Monitoring of deed instrument	Develop & implement plan to monitor compliance with deed restriction.	RP	EPA WDNR	September 2007	No	No

If investigation of groundwater quality on the property south of the landfill property indicates that groundwater is contaminated such that human health could potentially be affected if water supply wells were installed, then institutional controls to prevent the construction of such supply wells would be necessary. Currently, WAC Ch. NR812.08(4)(g), restricts construction of water

supply wells within 1200 feet of landfills. However, long-term protectiveness would require recording a restrictive covenant to run with the land, prohibiting installation of water supply wells into contaminated groundwater.

## **X. Protectiveness Statement(s)**

The remedy at the Spickler Landfill OU#1 currently protects human health and the environment because the landfill caps, gas extraction system, leachate collection system, groundwater and gas monitoring, fencing, and deed restriction control exposure pathways that could result in unacceptable risks. To be protective in the long-term, the status of groundwater contamination on the property south of the site must be determined, and an institutional control implemented if necessary. The OU#2 "no further action" remedy decision will also be protective in the long-term when groundwater quality on the south property is determined and an appropriate institutional control placed if necessary.

## **XI. Next Review**

The next five-year review of this site is required by September 2010.



## **Attachments**

### **Site Maps**

**Fig. 1 Site Location**

**Fig. 2 Groundwater Monitoring Well Locations**

**Fig. 3 Gas Monitoring Locations**

### **Site Inspection Checklist**

### **Groundwater Data**

**Summary of VOC PAL Exceedances in Groundwater Monitoring Wells 2000-2005**

**Fig. 5 Time vs. Concentration Plot for Vinyl Chloride in S1AR, S3AR and MW-6S**

**Fig. 6 Time vs. Concentration Plot for Arsenic in S1AR, S3AR and MW-6S**

### **Institutional Controls**

### **List of Documents Reviewed**

### **Interview Report**

### **Community Notification**

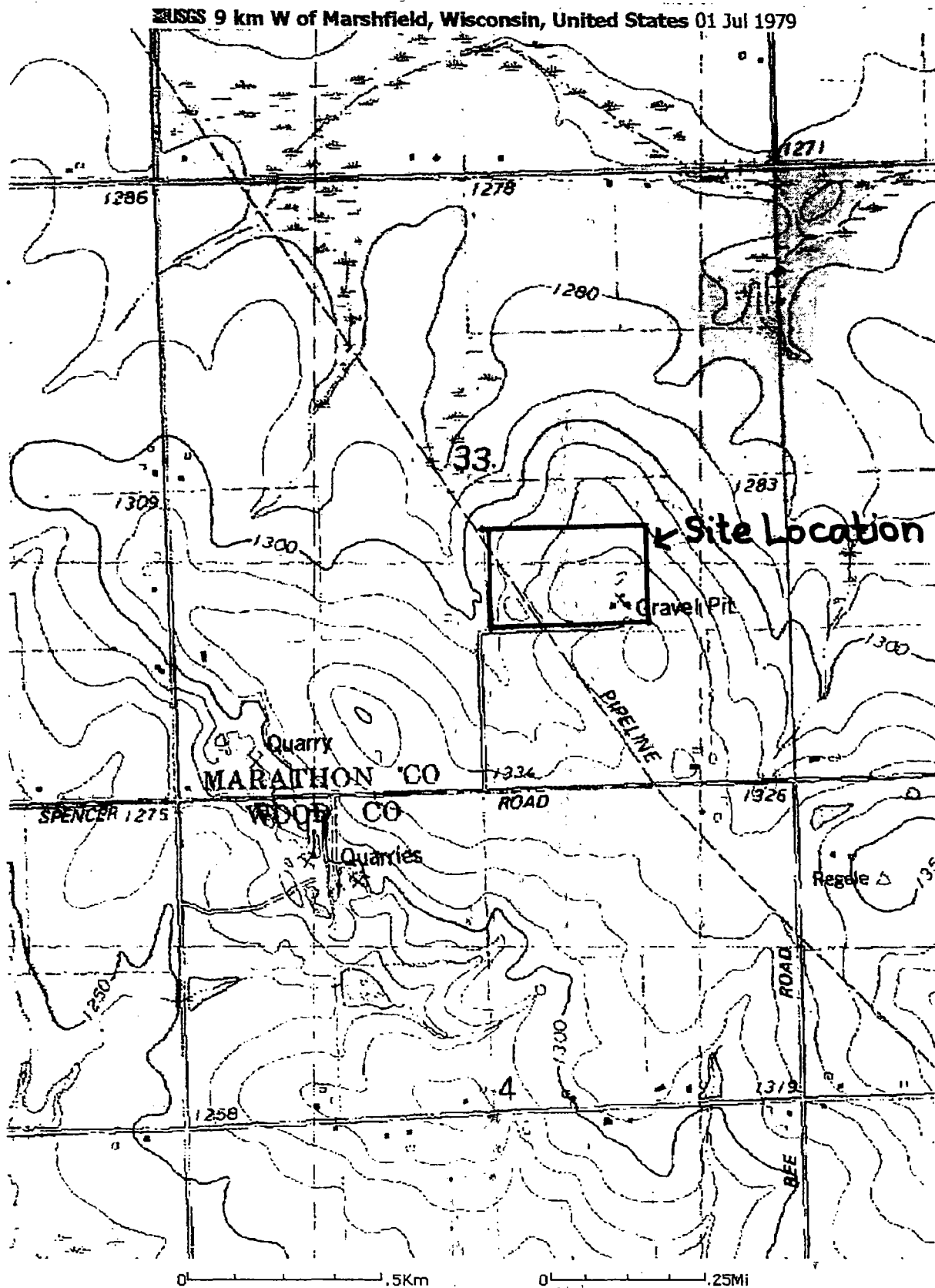
### **Photos Documenting Site Conditions**

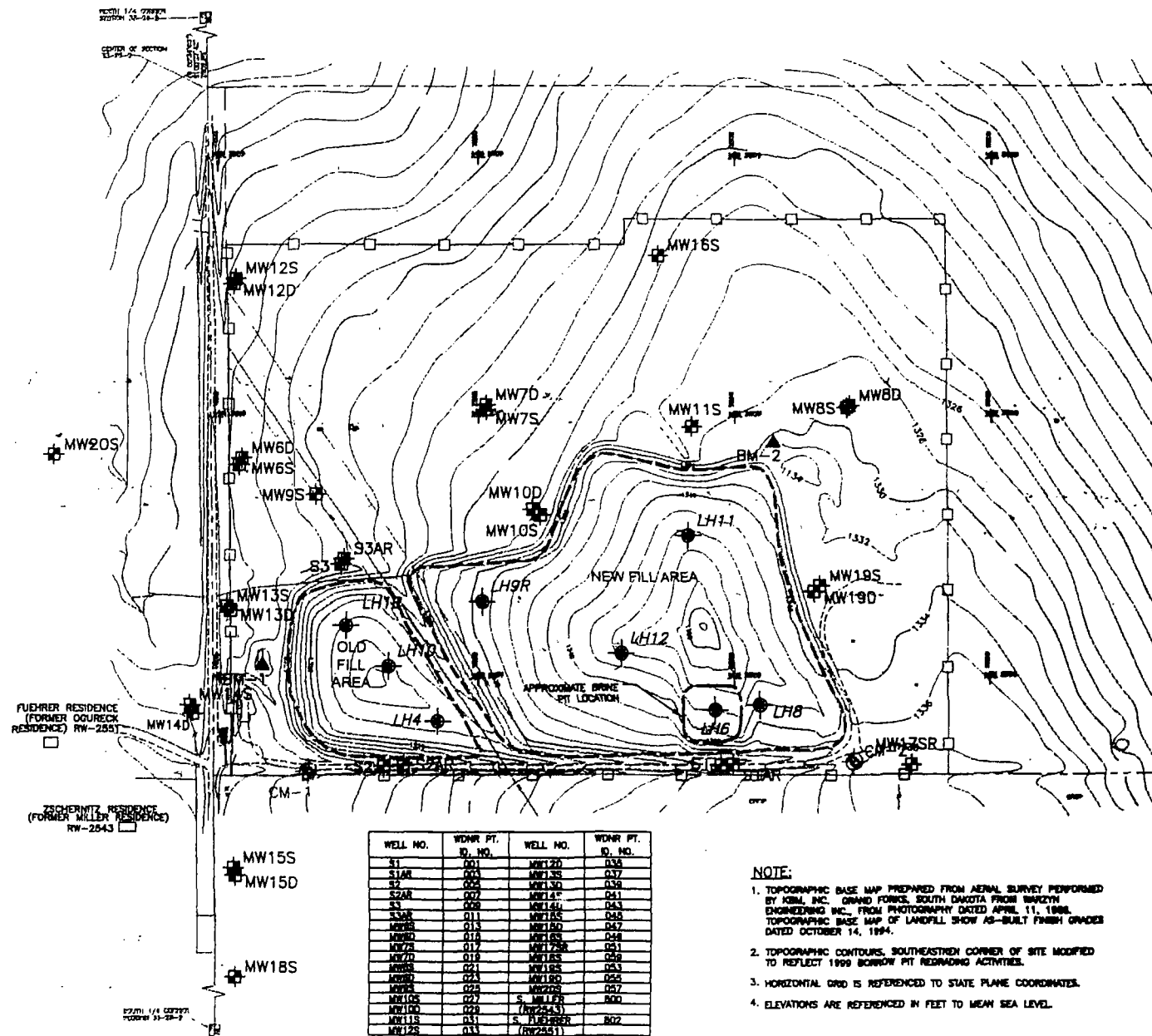
## **Site Maps**

Fig. 1 Site Location

Fig. 2 Groundwater Monitoring Well Locations

Fig. 3 Gas Monitoring Locations

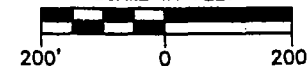




SURVEY CONTROL			
CM1	NORTH	2333.0	
	EAST	1171.0	
	ELEVATION	1308.86	
CM2	NORTH	2346.00	
	EAST	2233.00	
	ELEVATION	1337.62	
BM1	NORTH	2526.88	
	EAST	1082.42	
	ELEVATION	1308.03	
BOLT SET IN SE CORNER OF CONCRETE PAD PLANE STATION			
BM2	NORTH	2849.88	
	EAST	2074.18	
	ELEVATION	1333.41	
3/4" REBAR SET IN 8" DIAMETER CONCRETE POST			

LEGEND	
[Symbol]	SITE GRID
[Symbol]	SURVEY CONTROL MONUMENTS
[Symbol]	EXISTING SURFACE CONTOUR
[Symbol]	FENCE
[Symbol]	LONG TERM GROUNDWATER MONITORING WELL
[Symbol]	MONITORING WELL (NOT SAMPLED FOR LYING)
[Symbol]	RESIDENTIAL WELL MONITORING LOCATION
[Symbol]	APPROXIMATE FILL AREA
[Symbol]	LOCATE HEAD WELL LOCATION

SCALE IN FEET



WELL NO.	WDR PT. ID. NO.	WELL NO.	WDR PT. ID. NO.
S1	001	MW12D	035
S1AR	002	MW13S	037
S2	003	MW13D	039
S2AR	004	MW14S	041
S3	005	MW14D	043
S3AR	006	MW15S	045
LH1	007	MW15D	047
LH2	008	MW16S	049
LH3	009	MW16D	051
LH4	010	MW17S	053
LH5	011	MW17D	055
LH6	012	MW18S	057
LH7	013	MW18D	059
LH8	014	MW19S	061
LH9	015	MW19D	063
LH10	016	MW20S	065
LH11	017	MW20D	067
LH12	018	MW21S	069
LH13	019	MW21D	071
LH14	020	MW22S	073
LH15	021	MW22D	075
LH16	022	MW23S	077
LH17	023	MW23D	079
LH18	024	MW24S	081
LH19	025	MW24D	083
LH20	026	MW25S	085
LH21	027	MW25D	087
LH22	028	MW26S	089
LH23	029	MW26D	091
LH24	030	MW27S	093
LH25	031	MW27D	095
LH26	032	MW28S	097
LH27	033	MW28D	099

#### NOTE:

1. TOPOGRAPHIC BASE MAP PREPARED FROM AERIAL SURVEY PERFORMED BY K&M, INC. GRAND FORKS, SOUTH DAKOTA FROM 1982/83. ENGINEERING INC. FROM PHOTOGRAPHY DATED APRIL 11, 1988. TOPOGRAPHIC BASE MAP OF LANDFILL SHOW AS-BUILT FINISH GRADES DATED OCTOBER 14, 1994.
2. TOPOGRAPHIC CONTOURS, SOUTHEASTERN CORNER OF SITE MODIFIED TO REFLECT 1999 BORROW PIT REDWADING ACTIVITIES.
3. HORIZONTAL GRID IS REFERENCED TO STATE PLANE COORDINATES.
4. ELEVATIONS ARE REFERENCED IN FEET TO MEAN SEA LEVEL.



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LONG-TERM GROUNDWATER MONITORING  
SPICKLER LANDFILL  
WDR LICENSE NO. 4077  
TOWN OF SPENCER  
MARATHON COUNTY, WISCONSIN









Drawn:	SNL	12/28/99
Checked:	TGW	12/28/99
Approved:	JMT	12/28/99
PROJECT NUMBER	87560-T3000	
FIGURE NUMBER	2	



**ARMY CONTROL**

CM1 -	NORTH	2333.0
	EAST	1171.0
	ELEVATION	1018.06
CM2 -	NORTH	2346.00
	EAST	1237.00
	ELEVATION	1037.02
BM1 -	NORTH	2026.08
	EAST	1507.48
	ELEVATION	1200.05
BOLT SET IN SE CORNER OF CONCRETE PAD PLANE STATION		
BM2 -	NORTH	2040.88
	EAST	2074.15
	ELEVATION	1333.41
3/4" REBAR SET IN 8" DIAMETER CONCRETE POST		

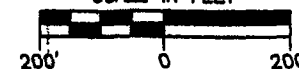
### LEGEND

-  BOREHOLE  
 SITE GRID  
 SURVEY CONTROL MONUMENT  
 EXISTING SURFACE CONTOUR  
 FENCE  
 LONG TERM CIRCUMFERENTIAL MONITORING WELL  
 MONITORING WELL (NOT SAMPLED FOR LTOM)  
 APPROXIMATE FILL AREA

**NOTE:**

1. TOPOGRAPHIC BASE MAP PREPARED FROM AERIAL SURVEY PERFORMED BY JENSEN, INC., GRAND FORKS, NORTH DAKOTA, FROM WESTERN ENGINEERING INC., FROM PHOTOGRAPHY DATED APRIL 11, 1968. TOPOGRAPHIC BASE MAP OF LANDFILL SHOW AS-BUILT FINISH GRADES DATED OCTOBER 14, 1964.
2. TOPOGRAPHIC CONTOURS, SOUTHEASTERN CORNER OF ARE MODIFIED TO REFLECT 1968 BORROW PIT REGRADING ACTIVITIES.
3. HORIZONTAL GRID IS REFERENCED TO STATE PLANE COORDINATES.
4. ELEVATIONS ARE REFERENCED IN FEET TO MEAN SEA LEVEL.

SCALE IN FEET



**FOLIORE  
VALMONT**

## **Site Inspection Checklist**

Please note that “O&M” is referred to throughout this checklist. At sites where Long-Term Response Actions are in progress, O&M activities may be referred to as “system operations” since these sites are not considered to be in the O&M phase while being remediated under the Superfund program.

## Five-Year Review Site Inspection Checklist (Template)

I. SITE INFORMATION	
Site name: <u>Spickler Landfill</u>	Date of inspection: <u>April 19, 2005</u>
Location and Region: <u>Town of Spencer Marathon Co. Reg 5</u>	EPA ID: <u>WID980902969</u>
Agency, office, or company leading the five-year review: <u>WDNR</u>	Weather/temperature: <u>Approx. 50°F, cloudy</u>
Remedy Includes: (Check all that apply)	
<input checked="" type="checkbox"/> Landfill cover/containment	<input type="checkbox"/> Monitored natural attenuation
<input checked="" type="checkbox"/> Access controls	<input type="checkbox"/> Groundwater containment
<input checked="" type="checkbox"/> Institutional controls	<input type="checkbox"/> Vertical barrier walls
<input type="checkbox"/> Groundwater pump and treatment	
<input type="checkbox"/> Surface water collection and treatment	
<input type="checkbox"/> Other <u>Leachate collection gas extraction</u>	
Attachments: <input type="checkbox"/> Inspection team roster attached <input checked="" type="checkbox"/> Site map attached	
II. INTERVIEWS (Check all that apply)	
1. O&M site manager <u>Tim Wolf</u> <u>Project Engineer</u> <u>4/19/05</u>	
Name	Title                  Date
Interviewed <input checked="" type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone	Phone no. <u>414-359-3030</u>
Problems, suggestions; <input checked="" type="checkbox"/> Report attached _____	
2. O&M staff <u>Jerry Ruetz</u> <u>Env't Techn</u> <u>4/19/05</u>	
Name	Title                  Date
Interviewed <input checked="" type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone	Phone no. <u>715-355-4324</u> <u>CR</u>
Problems, suggestions; <input type="checkbox"/> Report attached _____	
3. Local regulatory authorities and response agencies (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply.	
Agency <u>Town of Spencer</u>	
Contact <u>Mark Zimmerman</u> <u>Town Supervisor</u> <u>8/22/05</u> <u>715-659-4547</u>	
Name	Title                  Date                  Phone no.
Problems; suggestions; <input checked="" type="checkbox"/> Report attached _____	
Agency _____	

Contact <u>Jim Bergener</u>	Name <u>                    </u>	Title <u>Zoning Adm.</u>	Date <u>8/26/05</u>	Phone no. <u>715-261-1020</u>
Problems; suggestions; <input type="checkbox"/> Report attached <u>report attached</u>				
Agency <u>Marathon County</u>				
Contact <u>                    </u>				
Name <u>                    </u> Title <u>                    </u> Date <u>                    </u> Phone no. <u>                    </u>				
Problems; suggestions; <input type="checkbox"/> Report attached <u>                    </u>				
Agency <u>                    </u>				
Contact <u>                    </u>				
Name <u>                    </u> Title <u>                    </u> Date <u>                    </u> Phone no. <u>                    </u>				
Problems; suggestions; <input type="checkbox"/> Report attached <u>                    </u>				

4. Other interviews (optional) ☒ Report attached.

Mr. Mike Heckel

### III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)

1. **O&M Documents**

<input checked="" type="checkbox"/> O&M manual	<input checked="" type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date	<input type="checkbox"/> N/A
<input checked="" type="checkbox"/> As-built drawings	<input checked="" type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date	<input type="checkbox"/> N/A
<input checked="" type="checkbox"/> Maintenance logs	<input checked="" type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date	<input type="checkbox"/> N/A

Remarks                     

2. **Site-Specific Health and Safety Plan** ☒ Readily available ☒ Up to date ☐ N/A

☐ Contingency plan/emergency response plan ☐ Readily available ☐ Up to date ☒ N/A

Remarks                     

3. **O&M and OSHA Training Records** ☒ Readily available ☒ Up to date ☐ N/A

Remarks                     

4. **Permits and Service Agreements**



	<input type="checkbox"/> Air discharge permit <input type="checkbox"/> Effluent discharge <input type="checkbox"/> Waste disposal, POTW <input type="checkbox"/> Other permits _____ Remarks _____	<input type="checkbox"/> Readily available <input type="checkbox"/> Readily available <input type="checkbox"/> Readily available <input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input type="checkbox"/> Up to date <input type="checkbox"/> Up to date <input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A <input checked="" type="checkbox"/> N/A <input checked="" type="checkbox"/> N/A <input checked="" type="checkbox"/> N/A
5.	<b>Gas Generation Records</b> Remarks _____	<input checked="" type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date	<input type="checkbox"/> N/A
6.	<b>Settlement Monument Records</b> Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
7.	<b>Groundwater Monitoring Records</b> Remarks _____	<input checked="" type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date	<input type="checkbox"/> N/A
8.	<b>Leachate Extraction Records</b> Remarks _____	<input checked="" type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date	<input type="checkbox"/> N/A
9.	<b>Discharge Compliance Records</b> <input checked="" type="checkbox"/> Air <input type="checkbox"/> Water (effluent) Remarks _____	<input checked="" type="checkbox"/> Readily available <input type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date <input type="checkbox"/> Up to date	<input type="checkbox"/> N/A <input type="checkbox"/> N/A
10.	<b>Daily Access/Security Logs</b> Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
<b>IV. O&amp;M COSTS</b>				
1.	<b>O&amp;M Organization</b> <input type="checkbox"/> State in-house <input type="checkbox"/> PRP in-house <input type="checkbox"/> Federal Facility in-house <input type="checkbox"/> Other _____			
	<input type="checkbox"/> Contractor for State <input checked="" type="checkbox"/> Contractor for PRP <input type="checkbox"/> Contractor for Federal Facility			
2.	<b>O&amp;M Cost Records</b> <input checked="" type="checkbox"/> Readily available <input checked="" type="checkbox"/> Up to date <input type="checkbox"/> Funding mechanism/agreement in place Original O&M cost estimate _____ <input type="checkbox"/> Breakdown attached			
Total annual cost by year for review period if available <i>See text of report</i>				
	From _____	To _____	<input type="checkbox"/> Breakdown attached	
	Date	Date	Total cost	
	From _____	To _____	<input type="checkbox"/> Breakdown attached	
	Date	Date	Total cost	
	From _____	To _____	<input type="checkbox"/> Breakdown attached	
	Date	Date	Total cost	

From _____	To _____	Total cost _____	<input type="checkbox"/> Breakdown attached
Date	Date		
From _____	To _____	Total cost _____	<input type="checkbox"/> Breakdown attached
Date	Date		

3. **Unanticipated or Unusually High O&M Costs During Review Period**  
Describe costs and reasons: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**V. ACCESS AND INSTITUTIONAL CONTROLS**    ☐ Applicable    ☐ N/A

**A. Fencing**

1.    **Fencing damaged**                      ☐ Location shown on site map                      ☐ Gates secured                      ☐ N/A  
Remarks No \_\_\_\_\_  
\_\_\_\_\_

**B. Other Access Restrictions**

1.    **Signs and other security measures**                      ☐ Location shown on site map                      ☐ N/A  
Remarks \_\_\_\_\_  
\_\_\_\_\_

**C. Institutional Controls (ICs)**

1.    **Implementation and enforcement**  
Site conditions imply ICs not properly implemented                      ☐ Yes    ☒ No    ☐ N/A  
Site conditions imply ICs not being fully enforced                      ☐ Yes    ☒ No    ☐ N/A

Type of monitoring (e.g., self-reporting, drive by) reporting by PRP consultant  
Frequency & contractors who are at site  
Responsible party/agency once/week  
Contact Tim Wolf                      Project Engineer  

Name
Title
Date
Phone no.

Reporting is up-to-date                      ☐ Yes    ☐ No    ☒ N/A  
Reports are verified by the lead agency                      ☐ Yes    ☐ No    ☒ N/A

Specific requirements in deed or decision documents have been met                      ☐ Yes    ☐ No    ☒ N/A  
Violations have been reported                      ☐ Yes    ☒ No    ☐ N/A  
Other problems or suggestions:                      ☐ Report attached  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2.    **Adequacy**                      ☒ ICs are adequate                      ☐ ICs are inadequate                      ☐ N/A  
Remarks \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**D. General**

1. **Vandalism/trespassing** ☐ Location shown on site map ☐ No vandalism evident  
Remarks Evidence of property owner whose residence is adjacent, accessed landfill property.
2. **Land use changes on site** ☐ N/A  
Remarks NO
3. **Land use changes off site** ☐ N/A  
Remarks NO

**VI. GENERAL SITE CONDITIONS****A. Roads** ☒ Applicable ☐ N/A

1. **Roads damaged** ☐ Location shown on site map ☒ Roads adequate ☐ N/A  
Remarks \_\_\_\_\_

**B. Other Site Conditions**

Remarks \_\_\_\_\_

**VII. LANDFILL COVERS** ☐ Applicable ☐ N/A**A. Landfill Surface**

1. **Settlement** (Low spots) ☐ Location shown on site map ☒ Settlement not evident  
Areal extent \_\_\_\_\_ Depth \_\_\_\_\_  
Remarks \_\_\_\_\_
2. **Cracks** ☐ Location shown on site map ☒ Cracking not evident  
Lengths \_\_\_\_\_ Widths \_\_\_\_\_ Depths \_\_\_\_\_  
Remarks \_\_\_\_\_
3. **Erosion** ☐ Location shown on site map ☒ Erosion not evident  
Areal extent \_\_\_\_\_ Depth \_\_\_\_\_  
Remarks \_\_\_\_\_
4. **Holes** ☐ Location shown on site map ☐ Holes not evident  
Areal extent \_\_\_\_\_ Depth \_\_\_\_\_  
Remarks 1 small animal burrow near LC500#11+12

5.	<b>Vegetative Cover</b> <input type="checkbox"/> Trees/Shrubs (indicate size and locations on a diagram) Remarks _____	<input checked="" type="checkbox"/> Grass <input checked="" type="checkbox"/> Cover properly established <input checked="" type="checkbox"/> No signs of stress	
6.	<b>Alternative Cover (armored rock, concrete, etc.)</b> Remarks _____	<input checked="" type="checkbox"/> N/A	
7.	<b>Bulges</b> Areal extent _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> Bulges not evident Height _____	
8.	<b>Wet Areas/Water Damage</b> <input type="checkbox"/> Wet areas <input type="checkbox"/> Ponding <input type="checkbox"/> Seeps <input type="checkbox"/> Soft subgrade Remarks _____	<input checked="" type="checkbox"/> Wet areas/water damage not evident <input type="checkbox"/> Location shown on site map      Areal extent _____ <input type="checkbox"/> Location shown on site map      Areal extent _____ <input type="checkbox"/> Location shown on site map      Areal extent _____ <input type="checkbox"/> Location shown on site map      Areal extent _____	
9.	<b>Slope Instability</b> Areal extent _____ Remarks _____	<input type="checkbox"/> Slides <input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> No evidence of slope instability	
<b>B. Benches</b> <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A (Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)			
1.	<b>Flows Bypass Bench</b> Remarks _____	<input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> N/A or okay	
2.	<b>Bench Breached</b> Remarks _____	<input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> N/A or okay	
3.	<b>Bench Overtopped</b> Remarks _____	<input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> N/A or okay	
<b>C. Letdown Channels</b> <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A (Channel lined with erosion control mats, riprap, grout bags, or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)			
1.	<b>Settlement</b> Areal extent _____      Depth _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of settlement	
2.	<b>Material Degradation</b> Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of degradation	

	Material type _____	Areal extent _____	Remarks _____
3.	<b>Erosion</b> Areal extent _____ Remarks _____	<input type="checkbox"/> Location shown on site map Depth _____	<input type="checkbox"/> No evidence of erosion
4.	<b>Undercutting</b> Areal extent _____ Remarks _____	<input type="checkbox"/> Location shown on site map Depth _____	<input type="checkbox"/> No evidence of undercutting
5.	<b>Obstructions</b> Type _____ <input type="checkbox"/> Location shown on site map Size _____ Remarks _____	<input type="checkbox"/> No obstructions Areal extent _____	
6.	<b>Excessive Vegetative Growth</b> Type _____ <input type="checkbox"/> No evidence of excessive growth <input type="checkbox"/> Vegetation in channels does not obstruct flow <input type="checkbox"/> Location shown on site map Remarks _____	Areal extent _____	
<b>D. Cover Penetrations</b> <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A			
1.	<b>Gas Vents</b> <input checked="" type="checkbox"/> Active <input type="checkbox"/> Passive <input checked="" type="checkbox"/> Properly secured/locked <input type="checkbox"/> Evidence of leakage at penetration <input type="checkbox"/> N/A Remarks _____	<input checked="" type="checkbox"/> Functioning <input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> Routinely sampled <input checked="" type="checkbox"/> Good condition
2.	<b>Gas Monitoring Probes</b> <input checked="" type="checkbox"/> Properly secured/locked <input type="checkbox"/> Evidence of leakage at penetration Remarks _____	<input checked="" type="checkbox"/> Functioning <input type="checkbox"/> Needs Maintenance	<input checked="" type="checkbox"/> Routinely sampled <input checked="" type="checkbox"/> Good condition <input type="checkbox"/> N/A
3.	<b>Monitoring Wells (within surface area of landfill)</b> <input checked="" type="checkbox"/> Properly secured/locked <input type="checkbox"/> Evidence of leakage at penetration Remarks _____	<input checked="" type="checkbox"/> Functioning <input type="checkbox"/> Needs Maintenance	<input checked="" type="checkbox"/> Routinely sampled <input checked="" type="checkbox"/> Good condition <input type="checkbox"/> N/A
4.	<b>Leachate Extraction Wells</b> <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Evidence of leakage at penetration Remarks <u>Leachate trench headers in good condition</u>	<input type="checkbox"/> Functioning <input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> Routinely sampled <input checked="" type="checkbox"/> Good condition <input checked="" type="checkbox"/> N/A
5.	<b>Settlement Monuments</b> Remarks _____	<input type="checkbox"/> Located <input type="checkbox"/> Routinely surveyed	<input type="checkbox"/> N/A

<b>E. Gas Collection and Treatment</b> <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A		
1.	<b>Gas Treatment Facilities</b> <input type="checkbox"/> Flaring <input type="checkbox"/> Thermal destruction <input type="checkbox"/> Collection for reuse <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks <u>Gas flare not in use; gas extraction system run continuously w/ direct vent to atmosphere</u>	
2.	<b>Gas Collection Wells, Manifolds and Piping</b> <input checked="" type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____	
3.	<b>Gas Monitoring Facilities (e.g., gas monitoring of adjacent homes or buildings)</b> <input checked="" type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks <u>Additional gas monitoring point needed</u>	
<b>F. Cover Drainage Layer</b> <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A		
1.	<b>Outlet Pipes Inspected</b> <input type="checkbox"/> Functioning <input type="checkbox"/> N/A Remarks _____	
2.	<b>Outlet Rock Inspected</b> <input type="checkbox"/> Functioning <input type="checkbox"/> N/A Remarks _____	
<b>G. Detention/Sedimentation Ponds</b> <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A		
1.	<b>Siltation</b> Areal extent _____ Depth _____ <input type="checkbox"/> N/A <input type="checkbox"/> Siltation not evident Remarks _____	
2.	<b>Erosion</b> Areal extent _____ Depth _____ <input type="checkbox"/> Erosion not evident Remarks _____	
3.	<b>Outlet Works</b> <input type="checkbox"/> Functioning <input type="checkbox"/> N/A Remarks _____	
4.	<b>Dam</b> <input type="checkbox"/> Functioning <input type="checkbox"/> N/A Remarks _____	
<b>H. Retaining Walls</b> <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A		
1.	<b>Deformations</b> <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Deformation not evident Horizontal displacement _____ Vertical displacement _____ Rotational displacement _____ Remarks _____	

2.	<b>Degradation</b> Remarks _____	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Degradation not evident
<b>I. Perimeter Ditches/Off-Site Discharge</b> <span style="float: right;"><input checked="" type="checkbox"/> Applicable <del>N/A</del> <i>ul</i></span>			
1.	<b>Siltation</b> Areal extent _____ Depth _____ Remarks _____	<input type="checkbox"/> Location shown on site map	<input checked="" type="checkbox"/> Siltation not evident
2.	<b>Vegetative Growth</b> <input checked="" type="checkbox"/> Vegetation does not impede flow Areal extent _____ Type _____ Remarks _____	<input type="checkbox"/> Location shown on site map	<del>N/A</del> <i>ul</i>
3.	<b>Erosion</b> Areal extent _____ Depth _____ Remarks _____	<input type="checkbox"/> Location shown on site map	<input checked="" type="checkbox"/> Erosion not evident
4.	<b>Discharge Structure</b> Remarks _____	<input type="checkbox"/> Functioning	<input checked="" type="checkbox"/> N/A
<b>VIII. VERTICAL BARRIER WALLS</b> <span style="float: right;"><del>Applicable</del> <del>N/A</del> <i>N/A</i></span>			
1.	<b>Settlement</b> Areal extent _____ Depth _____ Remarks _____	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Settlement not evident
2.	<b>Performance Monitoring</b> Type of monitoring _____ <input type="checkbox"/> Performance not monitored Frequency _____ Head differential _____ Remarks _____		
<b>IX. GROUNDWATER/SURFACE WATER REMEDIES</b> <span style="float: right;"><input type="checkbox"/> Applicable <del>N/A</del></span>			
<b>A. Groundwater Extraction Wells, Pumps, and Pipelines</b> <span style="float: right;"><input type="checkbox"/> Applicable <del>N/A</del></span>			
1.	<b>Pumps, Wellhead Plumbing, and Electrical</b> <input type="checkbox"/> Good condition <input type="checkbox"/> All required wells properly operating <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____		
2.	<b>Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances</b> <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____		
3.	<b>Spare Parts and Equipment</b>		

<input type="checkbox"/> Readily available Remarks _____	<input type="checkbox"/> Good condition	<input type="checkbox"/> Requires upgrade <input type="checkbox"/> Needs to be provided
<b>B. Surface Water Collection Structures, Pumps, and Pipelines</b> <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A		
1. <b>Collection Structures, Pumps, and Electrical</b> <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____		
2. <b>Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances</b> <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____		
3. <b>Spare Parts and Equipment</b> <input type="checkbox"/> Readily available <input type="checkbox"/> Good condition <input type="checkbox"/> Requires upgrade <input type="checkbox"/> Needs to be provided Remarks _____		
<b>C. Treatment System</b> <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A		
1. <b>Treatment Train</b> (Check components that apply) <div style="display: flex; justify-content: space-between;"> <div> <input type="checkbox"/> Metals removal  <input type="checkbox"/> Air stripping  <input type="checkbox"/> Filters  <input type="checkbox"/> Additive (e.g., chelation agent, flocculent)  <input type="checkbox"/> Others         </div> <div> <input type="checkbox"/> Oil/water separation  <input type="checkbox"/> Carbon adsorbers         </div> <div> <input type="checkbox"/> Bioremediation         </div> </div> <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> Sampling ports properly marked and functional <input type="checkbox"/> Sampling/maintenance log displayed and up to date <input type="checkbox"/> Equipment properly identified <input type="checkbox"/> Quantity of groundwater treated annually _____ <input type="checkbox"/> Quantity of surface water treated annually _____ Remarks _____		
2. <b>Electrical Enclosures and Panels</b> (properly rated and functional) <input type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____		
3. <b>Tanks, Vaults, Storage Vessels</b> <input type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Proper secondary containment <input type="checkbox"/> Needs Maintenance Remarks _____		
4. <b>Discharge Structure and Appurtenances</b> <input type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____		
5. <b>Treatment Building(s)</b> <input type="checkbox"/> N/A <input type="checkbox"/> Good condition (esp. roof and doorways) <input type="checkbox"/> Needs repair		



	<input type="checkbox"/> Chemicals and equipment properly stored	
	Remarks	
6.	<b>Monitoring Wells (pump and treatment remedy)</b> <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> All required wells located <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks	
<b>D. Monitoring Data</b>		
1.	<b>Monitoring Data</b> <input checked="" type="checkbox"/> Is routinely submitted on time <input checked="" type="checkbox"/> Is of acceptable quality	
2.	Monitoring data suggests: <input checked="" type="checkbox"/> Groundwater plume is effectively contained <input checked="" type="checkbox"/> Contaminant concentrations are declining	
<b>D. Monitored Natural Attenuation</b>		
1.	<b>Monitoring Wells (natural attenuation remedy)</b> <input checked="" type="checkbox"/> Properly secured/locked <input checked="" type="checkbox"/> Functioning <input checked="" type="checkbox"/> Routinely sampled <input checked="" type="checkbox"/> Good condition <input checked="" type="checkbox"/> All required wells located <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks <u>Some minor maintenance needs noted.</u>	
<b>X. OTHER REMEDIES</b>		
If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.		
<b>XI. OVERALL OBSERVATIONS</b>		
<b>A. Implementation of the Remedy</b>		
Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). <u>The landfill cap is in good condition, reducing infiltration into &amp; through the waste mass.</u> <u>The above surface wells &amp; headers appear well maintained &amp; in good condition.</u> <u>The leachate collection system &amp; gas extraction systems are in good condition, reducing discharge of contaminants to groundwater &amp; potential for off-site movement of methane gas.</u>		
<b>B. Adequacy of O&amp;M</b>		
Describe issues and observations related to the implementation and scope of O&M procedures. In		

particular, discuss their relationship to the current and long-term protectiveness of the remedy.

Possible concerns are ① occasional freezing in low area of leachate collection piping; requires frequent monitoring to assure continued effective operation.  
② Periodic liquids accumulation in the gas extraction system - needs to be blown out frequently.  
These concerns need not affect long-term protectiveness if maintenance remains frequent & consistent.

#### C. Early Indicators of Potential Remedy Problems

Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future.

None

#### D. Opportunities for Optimization

Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.

Use of existing water table monitoring well, MW 145, to evaluate for possible movement of landfill gas toward residence at western edge of site.

April 14, 2000  
 MW #

Secure

Label

Ground  
Seal

Other

1

OK

OK

OK

(flush mount)

1AR

OK

OK

OK

painted pink

2

OK

OK

OK

2AR

OK

OK

OK

3

OK

OK

OK

3AR

OK

OK

OK

6S

OK

OK

OK

6D

OK

OK

OK

7S

OK

OK

OK

7D

OK

OK

OK

8S

OK

OK

OK

8D

OK

OK

OK

9S

OK

OK

OK

10S

OK

OK

OK

10D

OK

OK

OK

11S

OK

OK

OK

12S

OK

OK

OK

12D

OK

OK

OK

Sheet 1 of 2

MW	Secure	Label	Surface Seal	Other
13 S	OK	OK	OK	
13 D	OK	OK	OK	
14 S	OK	OK	OK	off-site
14 D	OK	OK	OK	
15 S		↑ OK	↑ OK	alongside Ecles Rd.
15 D	OK	OK	OK	S. of LF
16 S	OK	OK	needs filling around base	
17 SR	OK	OK	OK	
18 S	OK	OK	concrete 8" above g.s.	determine cause & repair
19 S	OK	OK	OK	
19 D	OK	OK	OK	
20 S	OK	OK	OK	off-site

Sheet 2 of 2  
 4/1/2005

## **Spickler Landfill Five Year Review**

### **Site Inspection**

**April 19, 2005**

### **Inspection Participants**

**Mary Tierney  
Eileen Kramer  
Tim Wolf  
Greg Jones**

**Remedial Project Manager  
Project Manager  
Project Engineer  
Representative**

**U.S. EPA  
WDNR  
STS Consultants  
Weyerhaeuser Corporation**

## **Groundwater Data**

Summary of VOC PAL Exceedances in Groundwater Monitoring Wells 2000-2005

Fig. 5 Time vs. Concentration Plot for Vinyl Chloride in S1AR, S3AR and MW-6S

Fig. 6 Time vs. Concentration Plot for Arsenic in S1AR, S3AR and MW-6S

**\*\* License Selection:**

4077 - SPICKLER LF

**\*\* Point ID Selections:**

1 - S1	3 - S1AR
5 - S2	7 - S2AR
9 - S3	11 - S3AR
13 - MW-6S	15 - MW-6D
17 - MW-7S	19 - MW-7D
21 - MW-8S	23 - MW-8D
25 - MW-9S	27 - MW-10S
29 - MW-10D	31 - MW-11S
33 - MW-12S	35 - MW-12D
37 - MW-13S	39 - MW-13D
41 - MW-14S	43 - MW-14D
45 - MW-15S	47 - MW-15D
49 - MW-16S	51 - MW-17SR
53 - MW-19S	55 - MW-19D
57 - MW-20S	59 - MW-18S

**\*\* Selected Sample Date Range:**

Start Date: 07/01/2000 End Date: 07/01/2005

**\*\* Only Detects are selected**

**\*\* Only Results > PAL/ACL are selected**

**\*\* Parameter Selections:**

32101 - BROMODICHLOROMETHANE IN WHOLE WATER SAMPLE (UG/L)	32102 - CARBON TETRACHLORIDE IN WHOLE WATER SAMPLE (UG/L)
32103 - 1,2-DICHLOROETHANE IN WHOLE WATER SAMPLE (UG/L)	32104 - TRIBROMOMETHANE IN WHL WTR SAMPLE (UG/L)
32105 - DIBROMOCHLOROMETHANE IN WHOLE WATER SAMPLE (UG/L)	32106 - CHLOROFORM IN WHOLE WATER SAMPLE (UG/L)
34010 - TOLUENE IN WHOLE WATER SAMPLE (UG/L)	34030 - BENZENE IN WHOLE WATER SAMPLE (UG/L)
34301 - CHLOROBENZENE IN WHL WTR SAMPLE (UG/L)	34311 - CHLOROETHANE IN WHL WTR SAMPLE (UG/L)
34413 - BROMOMETHANE IN WHL WTR SAMPLE (UG/L)	34418 - CHLOROMETHANE IN WHL WTR SAMPLE (UG/L)
34423 - DICHLOROMETHANE IN WHL WTR SAMPLE (UG/L)	34475 - TETRACHLOROETHYLENE IN WHOLE WATER SAMPLE (UG/L)
34488 - FLUOROTRICHLOROMETHANE IN WHOLE WATER SAMPLE (UG/L)	34496 - 1,1-DICHLOROETHANE IN WHOLE WATER SAMPLE (UG/L)
34501 - 1,1-DICHLOROETHYLENE IN WHL WTR SAMPLE (UG/L)	34506 - 1,1,1-TRICHLOROETHANE IN WHOLE WATER SAMPLE (UG/L)
34511 - 1,1,2-TRICHLOROETHANE IN WHOLE WATER SAMPLE (UG/L)	34536 - O-DICHLOROBENZENE IN WHL WTR SAMPLE (UG/L)
34541 - 1,2-DICHLOROPROPANE IN WHL WTR SAMPLE (UG/L)	34546 - TRANS-1,2-DICHLOROETHENE, TOTAL, IN WATER (UG/L)
34566 - M-DICHLOROBENZENE IN WHL WTR SAMPLE (UG/L)	34571 - P-DICHLOROBENZENE IN WHL WTR SAMPLE (UG/L)
34668 - DICHLORODIFLUOROMETHANE IN WHOLE WTR SAMPLE (UG/L)	34696 - NAPHTHALENE IN WHOLE WATER SAMPLE (UG/L)
34699 - TRANS-1,3-DICHLOROPROPENE IN WHL WTR SAMPLE (UG/L)	34704 - CIS-1,3-DICHLOROPROPENE IN WHL WTR SAMPLE (UG/L)
38437 - 1,2-DIBROMO-3-CHLOROPROPANE IN WHL WTR SAMP (UG/L)	39175 - VINYL CHLORIDE IN WHOLE WATER SAMPLE (UG/L)
39180 - TRICHLOROETHYLENE (TCE) IN WHOLE WTR SAMPLE (UG/L)	45617 - 1,2-DICHLOROETHENES
77041 - CARBON DISULFIDE IN WHL WATER SAMPLE (UG/L)	77093 - CIS-1,2-DICHLOROETHENE, WHOLE WATER (UG/L)
77128 - STYRENE IN WHOLE WATER SAMPLE (UG/L)	77135 - XYLENE, O-, IN WHOLE WATER SAMPLE (UG/L)
77596 - DIBROMOMETHANE IN WHL WTR SAMPLE (UG/L)	77651 - 1,2-DIBROMOETHANE (EDB) IN WHOLE WATER SAMPLE (UG/L)

**\*\* Parameter Selections:**

78032 - METHYL TERT-BUTYL ETHER (MTBE), WHL WTR SMPL (UG/L)  
78121 - XYLENE, O & P-, IN WHOLE WATER SAMPLE (UG/L)  
81551 - XYLENE, O, M & P-, IN WHOLE WATER SAMPLE (UG/L)  
81595 - METHYL ETHYL KETONE (MEK) IN WHL WTR SAMPLE (UG/L)  
81710 - XYLENE, M-, IN WHOLE WATER SAMPLE (UG/L)

**(Continued)**

78113 - ETHYLBENZENE IN WHOLE WATER SAMPLE (UG/L)  
78132 - XYLENE, P-, IN WHOLE WATER SAMPLE (UG/L)  
81552 - ACETONE IN WHL WTR SAMPLE (UG/L)  
81607 - TETRAHYDROFURAN IN WHOLE WATER SAMPLE (UG/L)  
85795 - XYLENE, M & P-, IN WHOLE WATER SAMPLE (UG/L)



License: 4077 SPICKLER LF FID: 737054780 West Central Region County: Marathon

\*\*\*\*\*  
 Point ID Point Name WUWN Point Type Point Status Gradient Enf Std  
 3 SIAR LO848 Piezometer-Non Sub D Well Active Y  
 \*\*\*\*\*

Sample Date	Parameter	Result	Amount	Units	Qual	LOD	LOQ	Rep	OC1	OC2	OC3
09/21/2000	D 34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)	2.000	(P)	ug/L		0.05	0.2	1	M	M	M
	D 34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)	2.000	(P)	ug/L		0.05	0.2	2	M	M	M
	D 39175 VINYL CHLORIDE IN WHOLE WATER SAMPLE (UG/L)	33.000	(E)	ug/L		0.43	1.4	2	M	M	M
	D 39175 VINYL CHLORIDE IN WHOLE WATER SAMPLE (UG/L)	39.000	(E)	ug/L		0.43	1.4	1	M	M	F
	D 39180 TRICHLOROETHYLENE (TCE) IN WHOLE WTR SAMPLE (UG/L)	.600	(P)	ug/L		0.16	0.5	1	M	M	M
	34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)	2.000	(P)	ug/L		0.05	0.2	1	M	M	M
	39175 VINYL CHLORIDE IN WHOLE WATER SAMPLE (UG/L)	32.000	(E)	ug/L		0.43	1.4	1	M	M	M
	** Totals For All Detects **		Detect Count: 9	Total: 69.100							
09/20/2001	34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)	1.000	(P)	ug/L		0.05	0.2	1	M	M	M
	39175 VINYL CHLORIDE IN WHOLE WATER SAMPLE (UG/L)	19.000	(E)	ug/L		0.43	1.4	1	M	M	M
	** Totals For All Detects **		Detect Count: 9	Total: 106.500							
03/25/2002	D 34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)	1.000	(P)	ug/L		0.05	0.2	1	M	M	M
	D 39175 VINYL CHLORIDE IN WHOLE WATER SAMPLE (UG/L)	17.000	(E)	ug/L		0.43	1.4	1	M	M	M
	34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)	.900	(P)	ug/L		0.05	0.2	1	M	M	M
	39175 VINYL CHLORIDE IN WHOLE WATER SAMPLE (UG/L)	15.000	(E)	ug/L		0.43	1.4	1	M	M	M
	** Totals For All Detects **		Detect Count: 11	Total: 53.700							
09/16/2002	34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)	1.000	(P)	ug/L		0.05	0.2	1	M	M	M
	34501 1,1-DICHLOROETHYLENE IN WHL WTR SAMPLE (UG/L)	2.000	(P)	ug/L		0.34	1.1	1	M	M	M
	39175 VINYL CHLORIDE IN WHOLE WATER SAMPLE (UG/L)	14.000	(E)	ug/L		0.43	1.4	1	M	M	M
	39180 TRICHLOROETHYLENE (TCE) IN WHOLE WTR SAMPLE (UG/L)	2.000	(P)	ug/L		0.16	0.5	1	M	M	M
	** Totals For All Detects **		Detect Count: 9	Total: 39.900							
03/19/2003	39180 TRICHLOROETHYLENE (TCE) IN WHOLE WTR SAMPLE (UG/L)	1.000	(P)	ug/L		0.16	1	1	M	M	M
	** Totals For All Detects **		Detect Count: 6	Total: 6.800							
09/16/2003	D 39180 TRICHLOROETHYLENE (TCE) IN WHOLE WTR SAMPLE (UG/L)	.900	(P)	ug/L		0.16	0.5	1	M	M	M
	39180 TRICHLOROETHYLENE (TCE) IN WHOLE WTR SAMPLE (UG/L)	1.000	(P)	ug/L		0.16	0.5	1	M	M	M
	** Totals For All Detects **		Detect Count: 6	Total: 5.700							

License: 4077 SPICKLER LF FID: 737054780 West Central Region County: Marathon

\*\*\*\*\*  
 Point ID Point Name WUWN Point Type Point Status Gradient Enf Std  
 3 SIAR LO848 Piezometer-Non Sub D Well Active Y (Continued)  
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Sample Date	Parameter	Result	Amount	Units	Qual	LOD	LOO	Rep	OC1	OC2	OC3
03/23/2004	39175 VINYL CHLORIDE IN WHOLE WATER SAMPLE (UG/L)	7.000	(E)	ug/L		0.43	1	1	M	M	M
** Totals For All Detects **		Detect Count: 12	Total:	22.600							
09/29/2004	39175 VINYL CHLORIDE IN WHOLE WATER SAMPLE (UG/L)	9.000	(E)	ug/L		0.3	1	1	M	M	M
** Totals For All Detects **		Detect Count: 13	Total:	24.300							

\*\*\*\*\*  
 Point ID Point Name WUWN Point Type Point Status Gradient Enf Std  
 7 S2AR LO850 Piezometer-Non Sub D Well Active Y  
 \*\*\*\*\*

Sample Date	Parameter	Result	Amount	Units	Qual	LOD	LOO	Rep	OC1	OC2	OC3
04/03/2001	34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)	2.000	(P)	ug/L		0.05	0.2	1	M	M	M
** Totals For All Detects **		Detect Count: 3	Total:	3.800							

\*\*\*\*\*  
 Point ID Point Name WUWN Point Type Point Status Gradient Enf Std  
 11 S3AR LO852 Piezometer-Non Sub D Well Active Y  
 \*\*\*\*\*

Sample Date	Parameter	Result	Amount	Units	Qual	LOD	LOO	Rep	OC1	OC2	OC3
09/20/2000	32103 1,2-DICHLOROETHANE IN WHOLE WATER SAMPLE (UG/L)	5.000	(P)	ug/L		0.19	0.6	1	M	M	M
	34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)	2.000	(P)	ug/L		0.05	0.2	1	M	M	M
	34423 DICHLOROMETHANE IN WHL WTR SAMPLE (UG/L)	2.000	(P)	ug/L		0.09	0.3	2	F	M	M
	39175 VINYL CHLORIDE IN WHOLE WATER SAMPLE (UG/L)	2.000	(E)	ug/L		0.43	1.4	1	M	M	M
** Totals For All Detects **		Detect Count: 7	Total:	23.000							
04/05/2001	32103 1,2-DICHLOROETHANE IN WHOLE WATER SAMPLE (UG/L)	5.000	(P)	ug/L		0.19	0.6	1	M	M	M
	34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)	2.000	(P)	ug/L		0.05	0.2	1	M	M	M
	34423 DICHLOROMETHANE IN WHL WTR SAMPLE (UG/L)	2.000	(P)	ug/L		0.09	0.3	2	M	M	M
	39175 VINYL CHLORIDE IN WHOLE WATER SAMPLE (UG/L)	3.000	(E)	ug/L		0.43	1.4	1	M	M	M
** Totals For All Detects **		Detect Count: 9	Total:	30.000							

License: 4077      **SPICKLER LF**      FID: 737054780      West Central Region      County: Marathon

\*\*\*\*\*  
 Point ID    Point Name      WUWN      Point Type      Point Status      Gradient      Enf Std  
 11      S3AR      LO852      Piezometer-Non Sub D Well      Active      Y      (Continued)  
 \*\*\*\*\*

Sample Date	Parameter	Result	Amount	Units	Qual	LOD	LOO	Rep	OC1	OC2	OC3
09/20/2001	32103 1,2-DICHLOROETHANE IN WHOLE WATER SAMPLE (UG/L)	5.000	(P)	ug/L		0.19	0.6	1	M	M	M
	34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)	2.000	(P)	ug/L		0.05	0.2	1	M	M	M
	34423 DICHLOROMETHANE IN WHL WTR SAMPLE (UG/L)	2.000	(P)	ug/L		0.09	0.3	2	F	M	M
	39175 VINYL CHLORIDE IN WHOLE WATER SAMPLE (UG/L)	2.000	(E)	ug/L		0.43	1.4	1	M	M	M
	<b>** Totals For All Detects **      Detect Count: 8      Total: 29.000</b>										
03/22/2002	32103 1,2-DICHLOROETHANE IN WHOLE WATER SAMPLE (UG/L)	6.000	(E)	ug/L		0.19	0.6	1	M	M	M
	34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)	2.000	(P)	ug/L		0.05	0.2	1	M	M	M
	34423 DICHLOROMETHANE IN WHL WTR SAMPLE (UG/L)	2.000	(P)	ug/L		0.09	0.3	2	M	M	M
	39175 VINYL CHLORIDE IN WHOLE WATER SAMPLE (UG/L)	3.000	(E)	ug/L		0.43	1.4	1	M	M	M
	<b>** Totals For All Detects **      Detect Count: 8      Total: 30.000</b>										
09/17/2002	32103 1,2-DICHLOROETHANE IN WHOLE WATER SAMPLE (UG/L)	5.000	(P)	ug/L		0.19	0.6	1	M	M	M
	34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)	2.000	(P)	ug/L		0.05	0.2	1	M	M	M
	34423 DICHLOROMETHANE IN WHL WTR SAMPLE (UG/L)	2.000	(P)	ug/L		0.09	0.3	2	M	M	M
	39175 VINYL CHLORIDE IN WHOLE WATER SAMPLE (UG/L)	2.000	(E)	ug/L		0.43	1.4	1	M	M	M
	<b>** Totals For All Detects **      Detect Count: 9      Total: 28.000</b>										
03/19/2003	D 32103 1,2-DICHLOROETHANE IN WHOLE WATER SAMPLE (UG/L)	4.000	(P)	ug/L		0.19	1	1	M	M	M
	D 34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)	2.000	(P)	ug/L		0.05	1	1	M	M	M
	D 39175 VINYL CHLORIDE IN WHOLE WATER SAMPLE (UG/L)	2.000	(E)	ug/L		0.43	1	1	M	M	M
	32103 1,2-DICHLOROETHANE IN WHOLE WATER SAMPLE (UG/L)	4.000	(P)	ug/L		0.19	1	1	M	M	M
	34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)	2.000	(P)	ug/L		0.05	1	1	M	M	M
	39175 VINYL CHLORIDE IN WHOLE WATER SAMPLE (UG/L)	2.000	(E)	ug/L		0.43	1	1	M	M	M
	<b>** Totals For All Detects **      Detect Count: 8      Total: 23.000</b>										
09/17/2003	32103 1,2-DICHLOROETHANE IN WHOLE WATER SAMPLE (UG/L)	5.000	(P)	ug/L		0.19	0.6	1	M	M	M
	34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)	2.000	(P)	ug/L		0.05	0.2	1	M	M	M
	34423 DICHLOROMETHANE IN WHL WTR SAMPLE (UG/L)	2.000	(P)	ug/L		0.09	0.3	2	F	M	M
	39175 VINYL CHLORIDE IN WHOLE WATER SAMPLE (UG/L)	2.000	(E)	ug/L		0.43	1.4	1	M	M	M
	<b>** Totals For All Detects **      Detect Count: 8      Total: 27.000</b>										

) Attains or Exceeds NR140 Preventive Action Limit      (E) Attains or Exceeds NR140 Enforcement Standard  
 : LOD < Result < LOO      D: Duplicate (Duplicates and QC Failures are not included in totals)      PWS: Data from Public Water Supply

License: 4077 SPICKLER LF FID: 737054780 West Central Region County: Marathon

\*\*\*\*\*  
 Point ID Point Name WUWN Point Type Point Status Gradient Enf Std  
 11 S3AR LO852 Piezometer-Non Sub D Well Active Y (Continued)  
 \*\*\*\*\*

Sample Date	Parameter	Result	Amount	Units	Qual	LOD	LOQ	Rep	OC1	OC2	OC3
03/23/2004	32103 1,2-DICHLOROETHANE IN WHOLE WATER SAMPLE (UG/L)	5.000	(P)	ug/L		0.19	1	1	M	M	M
	34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)	2.000	(P)	ug/L		0.05	1	1	M	M	M
	34423 DICHLOROMETHANE IN WHL WTR SAMPLE (UG/L)	2.000	(P)	ug/L		0.09	2	2	F	M	M
	39175 VINYL CHLORIDE IN WHOLE WATER SAMPLE (UG/L)	2.000	(E)	ug/L		0.43	1	1	M	M	M
** Totals For All Detects **		Detect Count:	8	Total:	26.000						
09/29/2004	32103 1,2-DICHLOROETHANE IN WHOLE WATER SAMPLE (UG/L)	5.000	(P)	ug/L		0.3	1	1	M	M	M
	34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)	2.000	(P)	ug/L		0.3	1	1	M	M	M
	34423 DICHLOROMETHANE IN WHL WTR SAMPLE (UG/L)	2.000	(P)	ug/L		0.6	2	2	F	M	M
	39175 VINYL CHLORIDE IN WHOLE WATER SAMPLE (UG/L)	2.000	(E)	ug/L		0.3	1	1	M	M	M
** Totals For All Detects **		Detect Count:	8	Total:	27.000						

\*\*\*\*\*  
 Point ID Point Name WUWN Point Type Point Status Gradient Enf Std  
 13 MW-6S LO853 WT Obs Well-Non Sub D Active Down Y  
 \*\*\*\*\*

Sample Date	Parameter	Result	Amount	Units	Qual	LOD	LOQ	Rep	OC1	OC2	OC3
09/20/2000	32103 1,2-DICHLOROETHANE IN WHOLE WATER SAMPLE (UG/L)	1.000	(P)	ug/L		0.19	0.6	1	M	M	M
	34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)	3.000	(P)	ug/L		0.05	0.2	1	M	M	M
	34423 DICHLOROMETHANE IN WHL WTR SAMPLE (UG/L)	2.000	(P)	ug/L		0.09	0.3	2	F	M	M
	39175 VINYL CHLORIDE IN WHOLE WATER SAMPLE (UG/L)	2.000	(E)	ug/L		0.43	1.4	1	M	M	M
** Totals For All Detects **		Detect Count:	7	Total:	11.300						
04/04/2001	32103 1,2-DICHLOROETHANE IN WHOLE WATER SAMPLE (UG/L)	2.000	(P)	ug/L		0.19	0.6	1	M	M	M
	34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)	4.000	(P)	ug/L		0.05	0.2	1	M	M	M
	34423 DICHLOROMETHANE IN WHL WTR SAMPLE (UG/L)	2.000	(P)	ug/L		0.09	0.3	2	M	M	M
	39175 VINYL CHLORIDE IN WHOLE WATER SAMPLE (UG/L)	3.000	(E)	ug/L		0.43	1.4	1	M	M	M
** Totals For All Detects **		Detect Count:	11	Total:	21.400						
09/18/2001	32103 1,2-DICHLOROETHANE IN WHOLE WATER SAMPLE (UG/L)	1.000	(P)	ug/L		0.19	0.6	1	M	M	M
	34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)	4.000	(P)	ug/L		0.05	0.2	1	M	M	M

P) Attains or Exceeds NR140 Preventive Action Limit (E) Attains or Exceeds NR140 Enforcement Standard  
 : LOD < Result < LOQ D: Duplicate (Duplications and OC Failures are not included in totals) PWS: Data from Public Water Supply

License: 4077 SPICKLER LF FID: 737054780 West Central Region County: Marathon

*****													
Point ID	Point Name	WUWN	Point Type	Point Status			Gradient	Enf Std					
13	MW-6S	LO853	WT Obs Well-Non Sub D	Active			Down	Y	(Continued)				
*****													
Sample Date	Parameter			Result	Amount	Units	Qual	LOD	LOO	Rep	OC1	OC2	OC3
09/18/2001	34423	DICHLOROMETHANE IN WHL WTR SAMPLE (UG/L)		3.000	(P)	ug/L		0.09	0.3	2	F	M	M
	39175	VINYL CHLORIDE IN WHOLE WATER SAMPLE (UG/L)		2.000	(E)	ug/L		0.43	1.4	1	M	M	M
	** Totals For All Detects **		Detect Count: 8	Total:	13.900								
09/16/2002	34030	BENZENE IN WHOLE WATER SAMPLE (UG/L)		900	(P)	ug/L		0.05	0.2	1	M	M	M
	34423	DICHLOROMETHANE IN WHL WTR SAMPLE (UG/L)		6.000	(E)	ug/L		0.09	0.3	2	M	M	M
	** Totals For All Detects **		Detect Count: 5	Total:	9.100								
03/17/2003	32103	1,2-DICHLOROETHANE IN WHOLE WATER SAMPLE (UG/L)		1.000	(P)	ug/L		0.19	1	1	M	M	M
	34030	BENZENE IN WHOLE WATER SAMPLE (UG/L)		2.000	(P)	ug/L		0.05	1	1	M	M	M
	39175	VINYL CHLORIDE IN WHOLE WATER SAMPLE (UG/L)		1.000	(E)	ug/L		0.43	1	1	M	M	M
** Totals For All Detects **		Detect Count: 7	Total:	8.400									
09/18/2003	D 32103	1,2-DICHLOROETHANE IN WHOLE WATER SAMPLE (UG/L)		1.000	(P)	ug/L		0.19	0.6	1	M	M	M
	D 34030	BENZENE IN WHOLE WATER SAMPLE (UG/L)		2.000	(P)	ug/L		0.05	0.2	1	M	M	M
	D 34423	DICHLOROMETHANE IN WHL WTR SAMPLE (UG/L)		1.000	(P)	ug/L		0.09	0.3	2	F	M	M
	32103	1,2-DICHLOROETHANE IN WHOLE WATER SAMPLE (UG/L)		1.000	(P)	ug/L		0.19	0.6	1	M	M	M
	34030	BENZENE IN WHOLE WATER SAMPLE (UG/L)		2.000	(P)	ug/L		0.05	0.2	1	M	M	M
	34423	DICHLOROMETHANE IN WHL WTR SAMPLE (UG/L)		.900	(P)	ug/L		0.09	0.3	2	F	M	M
	** Totals For All Detects **		Detect Count: 7	Total:	8.300								
03/23/2004	32103	1,2-DICHLOROETHANE IN WHOLE WATER SAMPLE (UG/L)		2.000	(P)	ug/L		0.19	1	1	M	M	M
	34030	BENZENE IN WHOLE WATER SAMPLE (UG/L)		3.000	(P)	ug/L		0.05	1	1	M	M	M
	34423	DICHLOROMETHANE IN WHL WTR SAMPLE (UG/L)		2.000	(P)	ug/L		0.09	2	2	F	M	M
	39175	VINYL CHLORIDE IN WHOLE WATER SAMPLE (UG/L)		2.000	(E)	ug/L		0.43	1	1	M	M	M
** Totals For All Detects **		Detect Count: 8	Total:	14.200									
09/27/2004	32103	1,2-DICHLOROETHANE IN WHOLE WATER SAMPLE (UG/L)		1.000	(P)	ug/L		0.3	1	1	M	M	M
	34030	BENZENE IN WHOLE WATER SAMPLE (UG/L)		3.000	(P)	ug/L		0.3	1	1	M	M	M
	39175	VINYL CHLORIDE IN WHOLE WATER SAMPLE (UG/L)		2.000	(E)	ug/L		0.3	1	1	M	M	M
** Totals For All Detects **		Detect Count: 8	Total:	13.000									

\*) Attains or Exceeds NR140 Preventive Action Limit (E) Attains or Exceeds NR140 Enforcement Standard  
 : LOD < Result < LOO D: Duplicate (Duplications and OC Failures are not included in totals) PWS: Data from Public Water Supply

License: 4077 SPICKLER LF FID: 737054780 West Central Region County: Marathon

\*\*\*\*\*  
Point ID Point Name WUWN Point Type Point Status Gradient Enf Std  
27 MW-10S LO860 WT Obs Well-Non Sub D Active Down Y (Continued)  
\*\*\*\*\*

Sample Date	Parameter	Result	Amount	Units	Qual	LOD	LOQ	Rep	OC1	OC2	OC3
09/19/2000	34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)	.600	(P)	ug/L		0.05	0.2	1	M	M	M
** Totals For All Detects **		Detect Count: 2	Total:	1.000							
09/16/2002	34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)	1.000	(P)	ug/L		0.05	0.2	1	M	M	M
** Totals For All Detects **		Detect Count: 2	Total:	1.700							

\*\*\*\*\*  
Point ID Point Name WUWN Point Type Point Status Gradient Enf Std  
31 MW-11S LO862 WT Obs Well-Non Sub D Active Down Y  
\*\*\*\*\*

Sample Date	Parameter	Result	Amount	Units	Qual	LOD	LOQ	Rep	OC1	OC2	OC3
09/20/2001	34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)	.600	(P)	ug/L		0.05	0.2	1	M	M	M
** Totals For All Detects **		Detect Count: 2	Total:	1.500							

\*\*\*\*\*  
Point ID Point Name WUWN Point Type Point Status Gradient Enf Std  
37 MW-13S LO865 WT Obs Well-Non Sub D Active Down Y  
\*\*\*\*\*

Sample Date	Parameter	Result	Amount	Units	Qual	LOD	LOQ	Rep	OC1	OC2	OC3
09/21/2000	D 34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)	1.000	(P)	ug/L		0.05	0.2	1	M	M	M
	34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)	1.000	(P)	ug/L		0.05	0.2	1	M	M	M
** Totals For All Detects **		Detect Count: 3	Total:	4.600							
04/04/2001	34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)	4.000	(P)	ug/L		0.05	0.2	1	M	M	M
** Totals For All Detects **		Detect Count: 4	Total:	37.000							
09/18/2001	34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)	3.000	(P)	ug/L		0.05	0.2	1	M	M	M
** Totals For All Detects **		Detect Count: 4	Total:	28.800							
03/25/2002	34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)	1.000	(P)	ug/L		0.05	0.2	1	M	M	M
** Totals For All Detects **		Detect Count: 2	Total:	1.900							

\*) Attains or Exceeds NR140 Preventive Action Limit (E) Attains or Exceeds NR140 Enforcement Standard  
: LOD < Result < LOQ D: Duplicate (Duplicates and OC Failures are not included in totals) PWS: Data from Public Water Supply

License: 4077

SPICKLER LF

FID: 737054780

West Central Region

County: Marathon

*****													
Point ID	Point Name	WUWN	Point Type	Point Status	Gradient	Enf Std							
37	MW-13S	LO865	WT Obs Well-Non Sub D	Active	Down	Y	(Continued)						
*****													
Sample Date	Parameter			Result	Amount	Units	Qual	LOD	LOO	Rep	OC1	OC2	OC3
09/17/2002	D 34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)			2.000	(P)	ug/L		0.05	0.2	1	M	M	M
	34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)			2.000	(P)	ug/L		0.05	0.2	1	M	M	M
	** Totals For All Detects **			Detect Count:	3	Total:	9.600						
03/17/2003	34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)			2.000	(P)	ug/L		0.05	1	1	M	M	M
	** Totals For All Detects **			Detect Count:	4	Total:	9.300						
09/18/2003	34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)			.700	(P)	ug/L		0.05	0.2	1	M	M	M
	** Totals For All Detects **			Detect Count:	2	Total:	3.700						
09/28/2004	34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)			2.000	(P)	ug/L		0.3	1	1	M	M	M
	** Totals For All Detects **			Detect Count:	3	Total:	2.900						
*****													
Point ID	Point Name	WUWN	Point Type	Point Status	Gradient	Enf Std							
47	MW-15D	LO870	Piezometer-Non Sub D Well	Active	Up	Y							
*****													
Sample Date	Parameter			Result	Amount	Units	Qual	LOD	LOO	Rep	OC1	OC2	OC3
03/25/2002	34423 DICHLOROMETHANE IN WHL WTR SAMPLE (UG/L)			.900	(P)	ug/L		0.09	0.3	2	M	M	M
	** Totals For All Detects **			Detect Count:	2	Total:	5.900						

P) Attains or Exceeds NR140 Preventive Action Limit (E) Attains or Exceeds NR140 Enforcement Standard

: LOD &lt; Result &lt; LOQ

D: Duplicate (Duplicates and OC Failures are not included in totals)

PWS: Data from Public Water Supply

SPICKLER LF ( 4077), PARAMETER=39175, VINYL CHLORIDE IN WHOLE WATER,

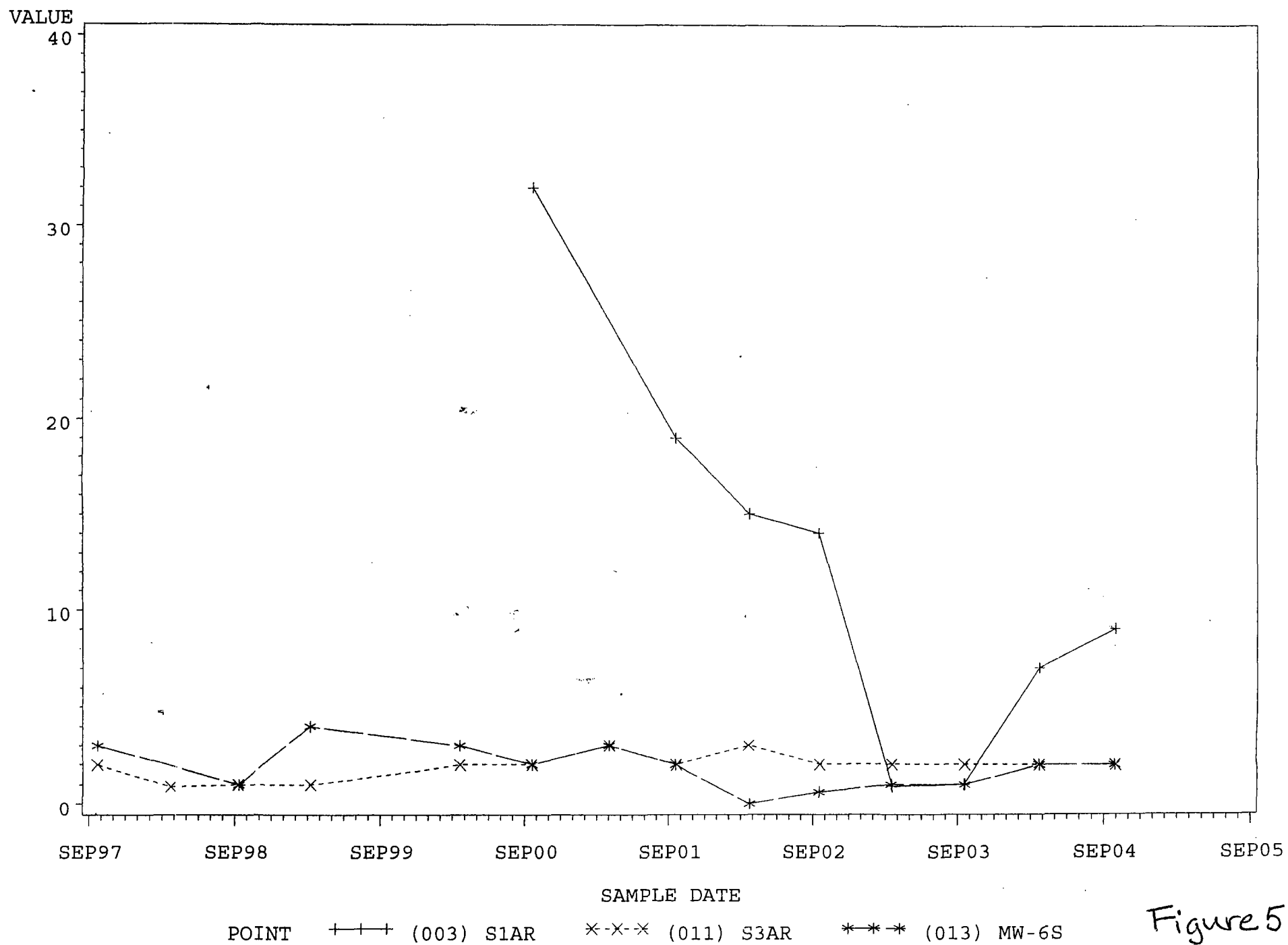


Figure 5



SPICKLER LF ( 4077), PARAMETER=' 1000, ARSENIC, DISSOLVED (UG/L AS),'

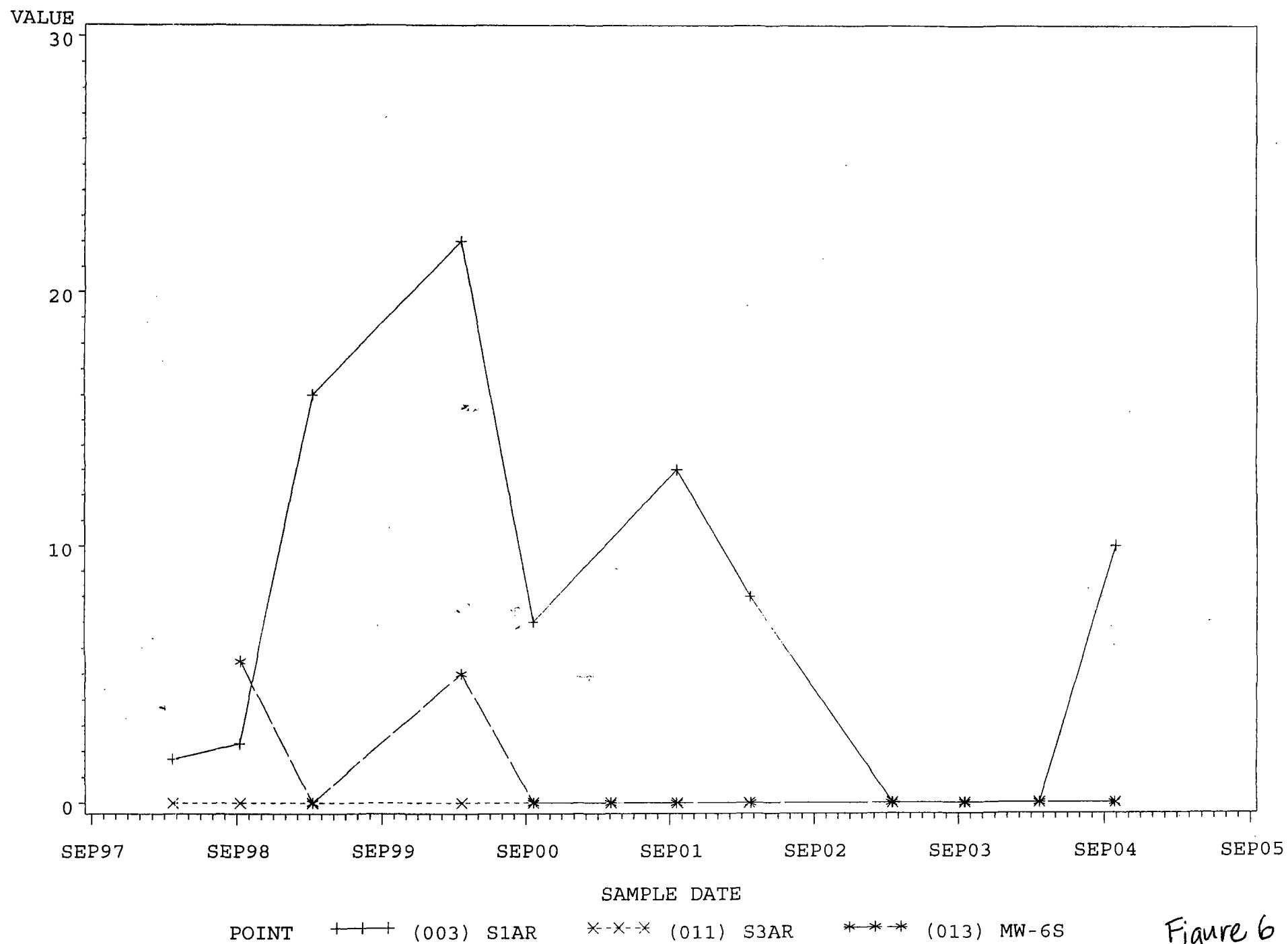


Figure 6

## **Institutional Controls**

DECLARATION OF RESTRICTIONS

In re: Lot one (1) of Certified Survey Map #7403, recorded in the office of the Register of Deeds for Marathon County, Wisconsin in Vol. 28 of Certified Survey Maps, page 176; being a part of the North one-half (N1/2) of the Southeast one-quarter (SE1/4) of Section thirty-three (33), Township twenty-six (26) North, Range two (2) East.  
(A copy of Certified Survey Map #7403 is attached as Exhibit A.))

*Michael J. Fuller*  
REGISTER  
*Sharon Lee Lee*

Return to:

LONSDORF & ANDRASKI  
P.O. BOX 1585  
WAUSAU, WI 54402-1585  
Ck. \$20.00

PIN: 37.074.4.2602.334.0993 ✓

STATE OF WISCONSIN )  
 )  
Marathon COUNTY ) ss.

WHEREAS, KENNETH A. FULLER is the owner of the above-described property; and

WHEREAS, the above-described property was used as a landfill for municipal and industrial wastes from July 1970 to March 1974, and vinyl chloride, lead and/or manganese contaminated groundwater above ch. NR 140, Wis. Adm. Code enforcement standards exists on this property at the following location(s):

MW6S, MW10S, MW11S, MW19S, MWS1, MWS1AR, MWS2, MWS2AR, MWS3, MWS3AR (location of these wells is shown on Exhibit B).

and,

WHEREAS, it is the desire and intention of the property owner to impose on the property restrictions which will make it unnecessary to conduct further remediation on the property at the present time.

WHEREAS, construction of wells where the water quality exceeds the drinking water standards in ch. 809, Wis. Adm. Code is restricted by ch. NR 811, Wis. Adm. Code and ch. NR 812, Wis. Adm. Code. Special well construction standards or water treatment requirements, or both, or well construction prohibitions may apply.

NOW, THEREFORE, the owner hereby declares that all of the property described above is held and shall be held, conveyed or encumbered, leased, rented, used, occupied and improved subject to the following limitations and restrictions:

1. Anyone who proposes to construct or reconstruct a well on this property is required to contact the Department of Natural Resources' Bureau of Drinking Water and Groundwater, or its successor agency, to determine what specific prohibitions or requirements are applicable and to obtain Department approval, prior to constructing or reconstructing a well on this property. No well may be constructed or reconstructed on this property unless applicable requirements are met.

2. Any person having or acquiring rights of ownership in the above-described property may not undertake any activities on the land which interfere with the closed facility causing a significant threat to public health, safety or welfare, and the following activities are specifically prohibited on that portion of the property described above where a cap or cover has been placed, unless prior written approval has been obtained from the Wisconsin Department of Natural Resources or its successors or assigns:

- a. excavating or grading of the land surface;
- b. filling in the capped area;
- c. plowing for agricultural cultivation; and
- d. construction or installation of a building or other structure with a foundation that would sit on or be placed within the cap or cover.

These restrictions are hereby declared to be covenants running with the land and shall be fully binding upon all persons acquiring the above-described property whether by descent, devise, purchase or otherwise. These restrictions benefit and are enforceable by the Department or its successors or assigns. The Department or its successors or assigns, may initiate

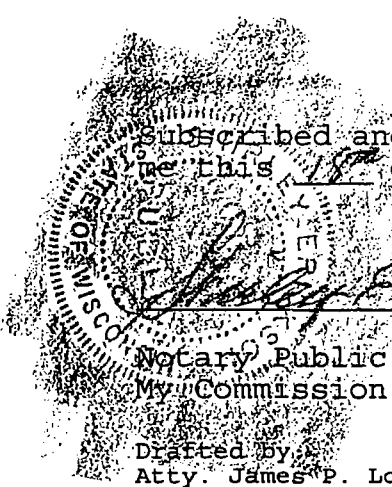
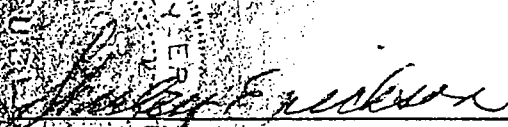
proceedings at law or in equity against any person or persons who violate or are proposing to violate this covenant, to prevent the proposed violation or to recover damages for such violation.

Any person who is or becomes owner of the property described above may request that the Department or its successors issue a determination that one or more of the restrictions set forth in this covenant are no longer required. Upon the receipt of such a request, the Department shall determine whether or not the restrictions contained herein can be extinguished. If the Department determines that the restrictions can be extinguished, an affidavit, with a copy of the Department's written determination attached, may be recorded to give notice that these groundwater use restrictions are no longer binding.

IN WITNESS WHEREOF, the owner of the property has executed this Declaration of Restrictions on this 18<sup>th</sup> day of December, 1998.

  
Kenneth A. Fuller

Subscribed and sworn to before  
me this 18<sup>th</sup> day of December 1998.

  
  
Notary Public, State of Wisconsin

My Commission: Expires 7-14-2002

Drafted By:

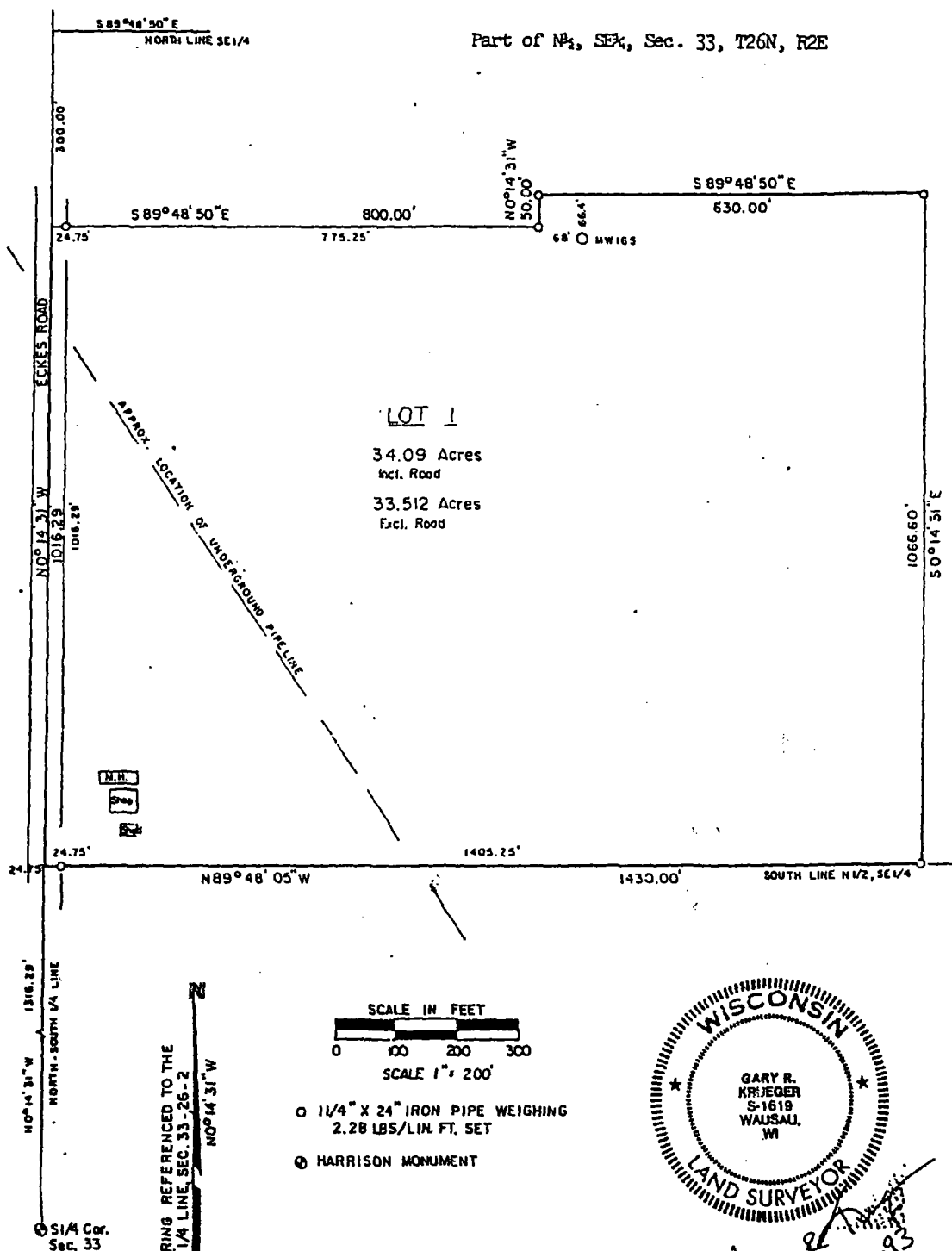
Atty. James P. Lonsdorf of Lonsdorf & Andraski, Wausau, WI 54403  
Wis. Bar #1012019

c:\wpdocs\realestate\fuller.dr - maj

RECORDED IN VOLUME 28 ON PAGE 176 OF CERTIFIED SURVEY MAPS

COPY

MAP # 7403  
DOC # 1,000,672



Assessor of  
tax keys  
Date, 7/21/93

EXHIBIT

A

CERTIFIED SURVEY MAP FOR THE SPICKLER LANDFILL

This survey is to supercede and correct Certified Survey Map recorded in Volume 28 on Page 141 in the Office of the Register of Deeds for Marathon County.

I, Gary R. Krueger, Registered Land Surveyor, do hereby certify: That I have surveyed and mapped by the order of Tom Ryan of STS Consultants and James P. Lonsdorf, Attorney, a parcel of land located in the North  $\frac{1}{2}$  of the Southeast  $\frac{1}{4}$  of Section 33, Township 26 North, Range 2 East, Town of Spencer, Marathon County, Wisconsin described as follows:

Commencing at the South  $\frac{1}{4}$  corner of said Section 33; thence  $N0^{\circ}14'31''W$ , along the North-South  $\frac{1}{4}$  line, 1316.29 feet to the point of beginning; thence continuing  $N0^{\circ}14'31''W$ , along said  $\frac{1}{4}$  line, 1016.29 feet; thence  $S89^{\circ}48'50''E$ , 800.00 feet; thence  $N0^{\circ}14'31''W$ , 50.00 feet; thence  $S89^{\circ}48'50''E$ , 630.00 feet; thence  $S0^{\circ}14'31''E$ , 1066.60 feet; thence  $N89^{\circ}48'05''W$ , along the South line of the  $N\frac{1}{2}$  of the  $SE\frac{1}{4}$ , 1430.00 feet to the point of beginning.

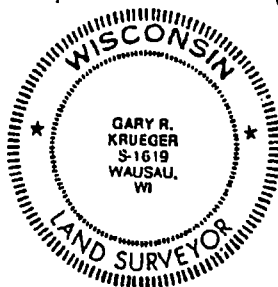
Excepting that part thereof used for roadway purposes.

Subject to all easements of record.

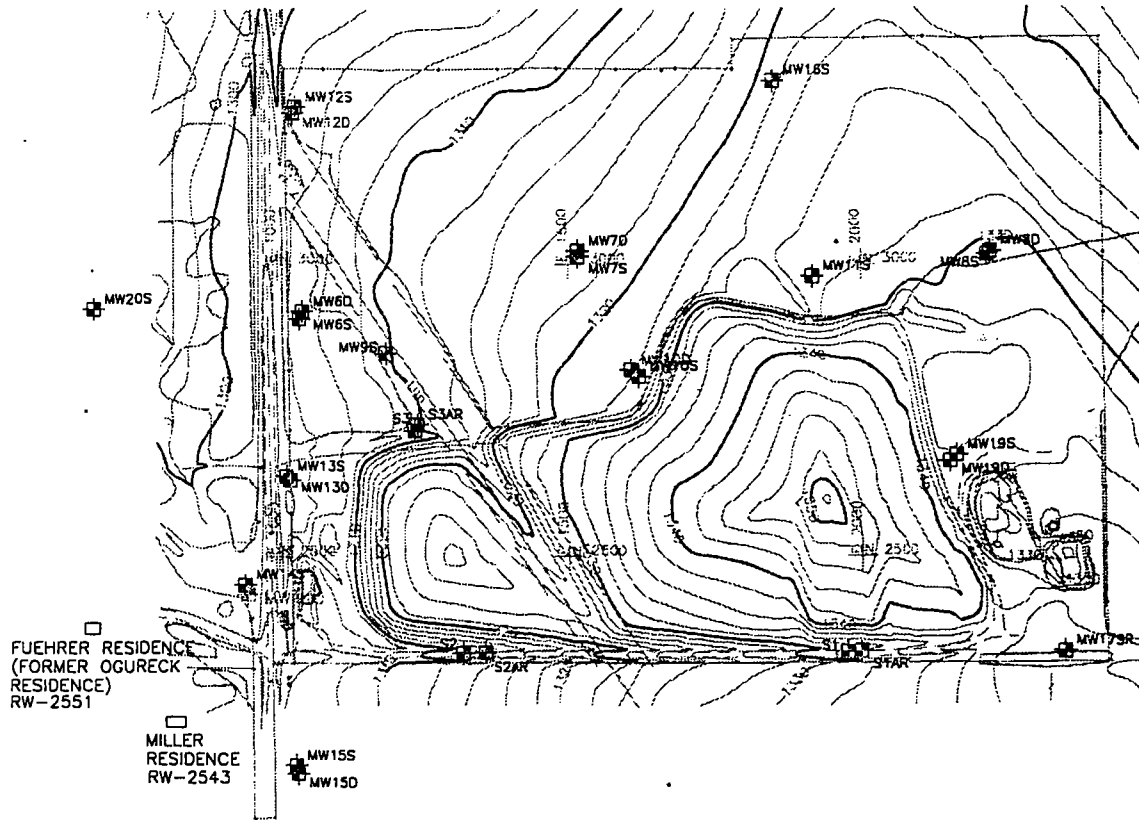
That such plat is a correct representation of all exterior boundaries of the land surveyed.

That I have fully complied with the provisions of Chapter 236.34 of the Wisconsin Statutes, Chapter A-E7 of the Wisconsin Administrative Code and the Land Division Regulations of the County of Marathon and the Town of Spencer in surveying, dividing and mapping the same.

Prepared by:  
SURVEYING SPECIALISTS OF  
CENTRAL WISCONSIN, INC.  
220 Sherman Street  
Wausau, WI 54401



*Gary R. Krueger*  
Gary R. Krueger RLS NO. 1619  
Survey completed July 21, 1993

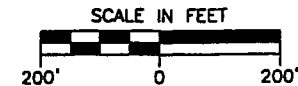


#### NOTE:

1. TOPOGRAPHIC BASE MAP PREPARED FROM AERIAL SURVEY PERFORMED BY KBM, INC. GRAND FORKS, SOUTH DAKOTA FOR WARZYN ENGINEERING INC., FROM PHOTOGRAPHY DATED APRIL 11, 1988. TOPOGRAPHIC BASE MAP OF LANDFILL SHOWS AS-BUILT FINISH GRADES DATED OCTOBER 14, 1994.

#### LEGEND

- LTGW MONITORING WELL
- MONITORING WELL [NOT SAMPLED FOR LTGWM]



WELL NO.	WDNR PT. ID. NO.	RESIDENCE	WDNR PT. ID. NO.
S1	001	S. MILLER	800
S1AR	003	(RW2543)	
S2	005	S. FUEHRER	802
S2AR	007	(RW2551)	
S3	009		
S3AR	011		
MW6S	013		
MW6D	015		
MW7S	017		
MW7D	019		
MW8S	021		
MW8D	023		
MW9S	025		
MW10S	027		
MW10D	029		
MW11S	031		
MW12S	033		
MW12D	035		
MW13S	037		
MW13D	039		
MW14S	041		
MW14D	043		
MW15S	045		
MW15D	047		
MW16S	049		
MW17S	051		
MW18S	053		
MW19S	055		
MW19D	057		
MW20S			

**STS**  
STS Consultants Ltd.  
Consulting Engineers

STS PROJECT NO.  
84374XA  
STS PROJECT FILE

SCALE  
AS SHOWN  
FIGURE NO.  
2

LONG-TERM  
GROUNDWATER MONITORING LOCATIONS  
SPICKLER LANDFILL  
WDNR LICENSE NO. 4077

DRAWN BY	JMS	DATE	12-17-9
CHECKED BY	JAK	DATE	12-17-9
APPROVED BY	JMT	DATE	12-17-9
DATE			

FULLER DECLARATION

**EXHIBIT B**

PROJECTS\B4374XA\G744004.DWG  
XREF=AS200BAS, AS2551



Unofficial Text (See Printed Volume). Current through date and Register shown on Title Page.

(124) "Well drilling" has the meaning designated in ch. 280, Stats., and includes any activity which requires the use of a well drilling rig or similar equipment, any activity which changes the character of a drilled well or which is conducted using a well drilling rig or similar equipment with the exception of the driving of points. Well drilling includes constructing, reconstructing or deepening a well, installation of a liner, installing or replacing a screen, well rehabilitation, hydrofracturing, blasting and chemical conditioning.

(125) "Well-point driving" means constructing a well by joining a drive point screen with lengths of pipe and driving the assembly into the ground with percussion equipment or by hand, but without removing material from a drillhole more than 10 feet below the ground surface.

(126) "Well vent" means a screened opening in a well seal to allow atmospheric pressure to be maintained in the well.

(127) "Well yield" means the quantity of water which may flow or be pumped from the well per unit of time.

(128) "Zone of saturation" means that part of the earth's crust beneath the shallowest water table in which all voids are filled with water under pressure greater than atmospheric.

**History:** Cr. Register, January, 1991, No. 421, eff. 2-1-91; am. (3), (4), (48), (61m), (74) (b), (79), (81), (82), (107) and (119), cr. (27m) (30f), (30m), (30i), (30x), (72m), (79m), (97m) and (110m), renum. (36) and (39) to be (61q) and (61u) and am. Register, September, 1994, No. 465, eff. 10-1-94; corrections made under s. 13.93 (2m) (b) 7., Stats., Register, September, 1994, No. 465; correction in (29), (30) and (79m) made under s. 13.93 (2m) (b) 6. and 7., Stats., Register, September, 1996, No. 489; corrections in (50), (81), (97), (123) and (124) made under s. 13.93 (2m) (b) 7., Stats., Register, December, 1998, No. 516; correction in (71) made under s. 13.93 (2m) (b) 7., Stats., Register July 2002 No. 559.

#### NR 812.08 Well, reservoir and spring location.

(1) **GENERAL.** Any potable or nonpotable well or reservoir shall be located:

(a) So the well and its surroundings can be kept in a sanitary condition.

(b) At the highest point on the property consistent with the general layout and surroundings if reasonably possible, but in any case protected against surface water flow and flooding and not downslope from a contamination source on the property or on an adjacent property regardless of what was installed first, the well or the contamination source. When a contamination source is installed upslope from a well in violation of this section after the well construction has been completed, the violation is not the responsibility of the well driller, except if the well driller knew or should have known of the proposed upslope installation of the contamination source. When there is no location on the property where this requirement can be met, a well may be constructed without a variance if it is constructed with a minimum of 20 or more feet of well casing pipe than is required by ss. NR 812.12 and 812.13 and Tables I and II or with a minimum of 60 feet of well casing pipe provided that the minimum well casing pipe depth requirements of s. NR 812.12 or 812.13 and Table I or II are met. This exception does not apply to high capacity, school or wastewater treatment plant wells. A well or reservoir is located downslope from a contamination source, regardless of the presence or absence of a structure between the well and the contamination source, if:

1. The ground surface elevation at the well or reservoir is lower than the elevation at the contamination source, and
2. Surface water that washes over the contamination source would travel within eight feet of the well or reservoir, or over the well or reservoir.

(c) As far away from any known or possible source of contamination as the general layout of the premises and the surroundings allow.

**Note:** Section PSC 114.234 C8 requires that a horizontal clearance of at least 3/4 of the vertical clearance of the conductors, including overhead power lines to the ground required by Rule 232 shall be maintained between open conductors and wells. Persons installing wells must comply with this requirement.

(d) Such that any potential contaminant source, not identified in this section or in Table A, is a minimum of 8 feet from the well or reservoir.

(e) Every well shall be located so that it is reasonably accessible with proper equipment for cleaning, treatment, repair, testing, inspection and any other maintenance that may be necessary.

(2) **RELATION TO BUILDINGS.** In relation to buildings, the location of any potable or nonpotable well shall be as follows:

(a) When a well is located outside and adjacent to a building, it shall be located so that the center line of the well extended vertically will clear any projection from the building by not less than 2 feet and so that the top of the well casing pipe extends at least 12 inches above the final established ground grade.

(b) When a structure is built over a drilled well, it shall have an access hatch or removable hatch, or provide other access to allow for pulling of the pump. The well casing pipe shall extend at least 12 inches above the floor and be sealed watertight at the point where it extends through the floor.

(c) No well may be located, nor a building constructed, such that the well casing pipe will terminate in or extend through the basement of any building or terminate under the floor of a building having no basement. The top of a well casing pipe may terminate in a walkout basement meeting the criteria of s. NR 812.42 (9) (b) 1. to 4. A well may not terminate in or extend through a crawl space having a below ground grade depression or excavation.

(3) **RELATION TO FLOODPLAINS.** (a) A potable or nonpotable well may be constructed, reconstructed or replaced in a flood-fringe provided that the top of the well is terminated at least 2 feet above the regional flood elevation for the well site.

(b) A well may be reconstructed or replaced in a floodway provided that the top of the well is terminated at least 2 feet above the regional flood elevation for the well site.

(c) A well may not be constructed on a floodway property that is either undeveloped or has building structures but no existing well.

(d) The regional flood elevation may be obtained from the department.

(4) **RELATION TO CONTAMINATION SOURCES.** Minimum separating distances between any new potable or nonpotable well, reservoir or spring and existing sources of contamination; or between new sources of contamination and existing potable or nonpotable wells, reservoirs or springs shall be maintained as described in this subsection. The minimum separating distances of this subsection do not apply to dewatering wells approved under s. NR 812.09 (4) (a). Greater separation distances may be required for wells requiring plan approval under s. NR 812.09. Separation distance requirements to possible sources of contamination will not be waived because of property lines. Minimum separating distances are listed in Table A and are as follows:

- (a) Eight feet between a well or reservoir and a:
  1. Buried gravity flow sanitary or storm building drain having pipe conforming to ch. Comm 84;
  2. Buried gravity flow sanitary or storm building sewer having pipe conforming to ch. Comm 84;
  3. Watertight clear water waste sump;
  4. Buried clear water waste drain having pipe conforming to ch. Comm 84;
  5. Buried gravity flow foundation drain;
  6. Rainwater downspout outlet;
  7. Cistern;
  8. Buried building foundation drain connected to a clear water waste drain or other subsoil drain;
  9. Noncomplying pit, subsurface pumproom, alcove, or reservoir;
  10. Nonpotable well;

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11. Fertilizer or pesticide storage tank with a capacity of less than 1,500 gallons, but only when the well is nonpotable;

Note: For potable wells see par. (d) 1.

12. Plastic silage storage and transfer tube;

13. Yard hydrant;

14. Swimming pool, measured to the nearest edge of the water; or

15. Dog or other small pet house, animal shelter or kennel housing not more than 3 adult pets on a residential lot.

(b) Twenty-five feet between a well or reservoir and a:

1. Buried grease interceptor or trap;

2. Septic tank;

3. Holding tank;

4. Buried building drain or building sewer having pipe not conforming to ch. Comm 84, wastewater sump, or non watertight clear water waste sumps,

5. Buried pressurized sanitary building sewer having pipe conforming to ch. Comm 84;

6. Buried gravity manure sewer;

7. Lake, river, stream, ditch or stormwater detention pond or basin measured to the regional high water elevation in the case of a lake or stormwater detention pond, to the edge of the floodway in the case of a river or stream or to the edge in the case of a ditch or stormwater detention basin;

9. Liquid-tight barn gutter;

10. Animal barn pen with concrete floor;

11. Buried pressurized sewer pipe conveying manure provided that the pipe meets ASTM specification D-2241, with standard dimension ratio of 21 or less or pressure pipe meeting the requirements of s. NR 110.13 (6) (f) or 811.62.

Note: There is no NR 110.13 (6) (f).

12. Buried fuel oil tanks serving single family residences, including any associated buried piping;

13. Discharge to ground from a water treatment device;

14. Vertical shaft installed below grade used for intake of air for a heating or air conditioning system; or

15. Buried sanitary or storm collector sewer serving 4 or fewer living units or having a diameter of 6 inches or less.

(c) Fifty feet between a well or reservoir and a:

1. Soil absorption unit receiving less than 8,000 gallons/day, existing, abandoned or alternate, but not including a school soil absorption unit;

Note: For school soil absorption units see par. (e); for soil absorption units receiving more than 8,000 gallons/day see par. (f) 3.

2. Privy;

3. Pet waste pit disposal unit;

4. Animal shelter;

5. Animal yard;

6. Silo;

7. Buried sewer used to convey manure having pipe conforming to ch. Comm 84 that does not meet the specifications in par. (b);

8. Liquid tight manure hopper or reception tank;

9. Filter strip;

10. Buried sanitary or storm collector sewer serving more than 4 living units or larger than 6 inches in diameter except that wells may be located or sewers installed such that a well is less than 50 feet, but at least 25 feet, from gravity collector sewers smaller than 16 inches in diameter or from force main collector sewers 4 inches or smaller in diameter provided that within a 50-foot radius of the well the installed sewer pipe meets the allowable leakage requirements of AWWA C600 and the requirements for water main equivalent type pipe as follows:

a. For sewers > 4" diameter, but < 16" diameter: PVC pipe > 4" diameter, but < 12" diameter shall meet AWWA C900 with

elastomeric joints having a standard dimension ratio of 18 or less; PVC pipe > 12" diameter, but < 16" diameter shall meet AWWA C905 with elastomeric joints having a standard dimension ratio of 18 or less; Ductile iron pipe shall meet AWWA C115 or AWWA C151 having a thickness class 50 or more.

b. For sewers < 3" diameter, the pipe shall be any rigid pipe in the ch. Comm 84 "Table for Pipe and Tubing for Water Services and Private Water Mains," including approved ABS, brass, cast iron, CPVC, copper (not including type M copper) ductile iron, galvanized steel, polybutylene (PB), polyethylene (PE), PVC, or stainless steel pipe.

11. An influent sewer to a wastewater treatment plant;

12. The nearest existing or future grave site in cemeteries;

13. Wastewater treatment plant effluent pipe;

14. Buried pressurized sewer having pipe not conforming to ch. Comm 84; or

15. Manure loading area.

Note: The minimum separating distance between a well or reservoir and a lift station is based on the presence of a sewer force main at the lift station.

(d) One hundred feet between a well or reservoir and a:

1. Bulk surface storage tank with a capacity greater than 1,500 gallons or any bulk buried storage tank regardless of capacity, including, for both surface or buried tanks, associated buried piping for any solid, semi-solid or liquid product but not including those regulated under par. (b) 12. This subdivision includes, but is not limited to petroleum product tanks, waste oil tanks and pesticide or fertilizer storage tanks not regulated under par. (a) 11. This subdivision does not include septic, holding and manure reception tanks, or liquified petroleum gas tanks as specified in ch. Comm 11.

2. Liquid-tight, fabricated manure or silage storage structure, in ground or at ground surface;

3. Wastewater treatment plant structure, conveyance or treatment unit; or

4. Dry fertilizer or pesticide storage building or area when more than 100 pounds of either or both materials are stored;

5. Well, drillhole or water system used for the underground placement of any waste, surface or subsurface water or any substance as defined in s. 160.01 (8), Stats.;

6. Stormwater infiltration basin;

7. Uncovered storage of silage on the ground surface;

8. Water-tight silage storage trench or pit; or

9. Lift station.

(e) Two hundred feet between a school well and a soil absorption unit receiving less than 8,000 gallons per day, existing or abandoned.

(ee) One hundred fifty feet between a well or reservoir and a temporary manure stack.

(f) Two hundred fifty feet between a well or reservoir and a:

1. Manure stack.

2. Earthen or excavated manure storage structure.

Note: Variances from the separating distances may be granted as specified in s. NR 812.43 for earthen storage and manure stacks constructed and maintained to the specifications of Soil Conservation Standards No. 425 or 312, respectively.

3. Soil absorption unit receiving 8,000 or more gallons per day, existing, abandoned, or alternate.

4. Sludge landspreading or drying area.

5. An earthen silage storage trench or pit.

6. Liquid waste disposal system including, but not limited to a treatment pond or lagoon, ridge and furrow system and spray irrigation system.

Note: Variance from this separating distance may be granted for treatment ponds or lagoons constructed and maintained to an approval granted under ch. NR 213.

7. Salvage yard.

8. A salt or deicing material storage area including the building structure and the surrounding area where the material is trans-

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ferred to vehicles. This subdivision does not include bagged deicing material.

9. Solid waste processing facility.

10. Solid waste transfer facility.

11. The boundaries of a landspreading facility for spreading of petroleum-contaminated soil regulated under ch. NR 718 while that facility is in operation.

(g) Twelve hundred feet between a well or reservoir and:

1. The nearest edge of an existing, proposed or abandoned landfill, measured to the nearest fill area of abandoned landfills, if known, otherwise measured to the nearest property line;

2. The nearest edge of a coal storage area in excess of 500 tons; or

3. A hazardous waste treatment facility regulated by the department.

## **List of Documents Reviewed**

## **Spickler Landfill Superfund Site**

### **Five Year Review**

#### **Documents Reviewed**

Remedial Investigation Report, Final Report, by Warzyn Inc., August 1991

Baseline Risk Assessment, Spickler Landfill RI/FS, Final Technical Memorandum, by Warzyn Inc., August 1991.

EPA Superfund Record of Decision: Spickler Landfill, EPA ID: WID980902969, OU 1, Spencer, WI, 06/03/1992.

Final Construction Completion Report, Spickler Landfill Site, by STS Consultants Ltd., August 11, 1995.

Final Long-Term Groundwater Monitoring Plan, Spickler Landfill Site, by STS Consultants Ltd., November 3, 1995.

Final Operations and Maintenance Plan, Spickler Landfill Site, by STS Consultants Ltd., November 3, 1995.

EPA Record of Decision: Spickler Landfill, Spencer, Wisconsin, OU 2, 09/29/1998.

Five-Year Review Report, Spickler Landfill Superfund Site, by U.S. EPA, Region 5, 09/28/2000.

Second Five-Year Evaluation Report 1999-2004, Spickler Landfill Site, by STS Consultants, March 16, 2005.

## Interview Report

### INTERVIEW DOCUMENTATION FORM

The following is a list of individual interviewed for this five-year review. See the attached contact record(s) for a detailed summary of the interviews.

<u>Tim Wolf</u> Name	<u>Project Engineer</u> Title/Position	<u>STS Consultants</u> Organization	<u>4/19/2005</u> Date
<u>Mike Heckel</u> Name	<u>Property Owner</u> Title/Position	<u>Farm South of site</u> Organization	<u>4/19/2005</u> Date
<u>Jim Bergener</u> Name	<u>Co. Zoning staff</u> Title/Position	<u>Marathon Co.</u> Organization	<u>8/26/2005</u> Date
<u>Mark Zimmerman</u> Name	<u>Town Supervisor</u> Title/Position	<u>Town of Spencer</u> Organization	<u>8/27/05</u> Date
 Name	 Title/Position	 Organization	 Date
 Name	 Title/Position	 Organization	 Date

INTERVIEW RECORD			
Site Name: Spickler Landfill		EPA ID No.: WID980902969	
Subject: Five-Year Review		Time: 4/19/05	Date: 4/19/05
Type: Telephone	<u>Visit</u>	Other	Incoming Outgoing
Location of Visit: at site			
Contact Made By:			
Name: Eileen Kramer	Title: Remedial Project Manager	Organization: Wisc. DNR	
Individual Contacted:			
Name: Tim Wolf	Title: Project Engineer	Organization: STS Consultants	
Telephone No: 414-359-3030		Street Address: 11425 Lake Park Drive	
Fax No: 414-359-0822		City, State, Zip: Milwaukee, WI 53224	
E-Mail Address:			
Summary Of Conversation			
<p>Mr. Wolf stated that he is site manager &amp; is responsible for directing site O+M activities. He conducted meeting prior to site walk-over, wherein he provided brief history and orientation to the site. During the site inspection he provided access to each of the on-site components of the remedy, (Ex. control panels, pump stations, leachate tanks), &amp; explained or demonstrated their functioning.</p>			



## INTERVIEW RECORD

Site Name: Spickler Landfill		EPA ID No.: WID980902969	
Subject: Five-Year Review		Time: 7:30 AM	Date: 4/19/05
Type: Telephone	<u>Visit</u>	Other	
Location of Visit: at interviewer's farm		Incoming	Outgoing
Contact Made By:			
Name: Eileen Kramer	Title: Remedial Project Manager	Organization: Wisc. DNR	
Individual Contacted:			
Name: Mike Heckel	Title: Property owner	Organization: Farm south of site	
Telephone No:	Street Address:	5730 Lincoln - Spencer Rd.	
Fax No:	City, State, Zip:	Spencer, WI 54484	
E-Mail Address:			
Summary Of Conversation			
<p>Mr. Heckel stated that he has no concerns with current on-going work. However, he is opposed to construction of additional monitoring wells on his property. He has lived on this farm all his life. He does not believe land fill should have been located next to his farm.</p> <p>Has 2 water supply wells, 1 at 60' deep &amp; 1 about 110' deep w/ 60' casing (installed approx 3 yrs. ago)</p>			

INTERVIEW RECORD			
Site Name: Spickler Landfill		EPA ID No.: WID980902969	
Subject: Five-Year Review		Time:	Date: 8/26/2005
Type: <u>Telephone</u> Visit Other	Incoming <u>Outgoing</u>		
Location of Visit:			
Contact Made By:			
Name: Eileen Kramer	Title: Remedial Project Manager	Organization: Wisc. DNR	
Individual Contacted:			
Name: Jim Bergener	Title:	Organization: Marathon Co.	
Telephone No: 715-261-6020		Street Address: 200 Forest St.	
Fax No:		City, State, Zip: Wausau, WI 54403	
E-Mail Address:			
Summary Of Conversation			
<p>Mr. Bergener stated that review of proposed development activities is one of his responsibilities. Currently he is not aware of any proposed new development in proximity of site.</p>			

INTERVIEW RECORD		
Site Name: Spickler Landfill		EPA ID No.: WID980902969
Subject: Five-Year Review		Time: 11:30AM Date: 8/22/05
Type: <u>Telephone</u> Visit Other	Incoming <u>Outgoing</u>	
Location of Visit:		
Contact Made By:		
Name: Eileen Kramer	Title: Remedial Project Manager	Organization: Wisc. DNR
Individual Contacted:		
Name: Mark Zimmerman	Title: Town Supervisor	Organization: Town of Spencer
Telephone No: 715-659-4547	Street Address: 3222 Casey Ave	
Fax No:	City, State, Zip: Spencer, WI 54479	
E-Mail Address:		
Summary Of Conversation		
<p>Has no concerns about current activities @ Spickler landfill site. Has heard of no concerns from town residents.</p>		

## Community Notification

China's east coast.

The eight-day maneuvers with 7,000 Chinese troops and 1,800 Russians underscored growing military ties between the former Cold War enemies, motivated by their common unease with U.S. dominance in world affairs.

On Thursday, Chinese and Russian paratroopers simulated the seizure of an airfield as planes dropped combat vehicles by parachute on the Shandong Peninsula in the Yellow Sea, China's official Xinhua News Agency reported.

## Top Egyptian police officers killed

CAIRO, Egypt — Two senior Egyptian police officers were killed Thursday by land mines possibly rigged to explode during a search of the Sinai Peninsula's rugged mountains for terror suspects linked to recent tourist resort bombings, security officials said.

Maj. Gen. Mahmoud Adel and Lt. Col. Omar Abdel Moneim were the highest-ranking police officers killed in Egypt since an Islamist insurgency in the mid-1990s, and the first slain since 4,000 security personnel began a sweep Sunday of the northern Sinai for suspects linked to July's Sharm el-Sheik attacks and two October resort bombings.

Thursday's blasts by two land mines occurred on 5,900-foot Halal mountain, some 37 miles south of the Mediterranean coastal town of el-Arish, the Interior Ministry said.

It did not say if the mines had been planted by suspected militants or left over from previous Arab-Israeli wars.

— The Associated Press

## Wisconsin Department of Natural Resources is conducting the second five-year review of The Spickler Landfill Superfund Site

The Spickler Landfill Site is located on Eckes Road, Town of Spencer, Marathon County. The review is to be completed by September 28, 2005.

The site formerly operated as a landfill. Groundwater on the site was found to be contaminated with volatile organic compounds. The remedy selected by U.S. EPA, with concurrence of WDNR, in 1992 included construction of a new cap on the landfill, construction and operation of a gas extraction system and leachate collection system, and fencing to limit access to the site. Construction was completed in 1995, and the first five-year review was completed in 2000.

Members of the community who wish to comment on the site and the remedy should contact the WDNR project manager, Eileen Kramer, WDNR, West Central Region, 1300 W. Clairemont Ave., P.O. Box 4001, Eau Claire WI 54702. Telephone: 715-839-3824. Email: eileen.kramer@dnr.state.wi.us

and we saw that the matters will need another day in order to reach results that please everyone."

Earlier, however, a Sunni Arab negotiator said Shiites didn't even show up for a late-night meeting.

The United States hopes the constitution will invigorate a political process that will — in time — lure disaffected Sunni Arabs away from the Sunni-dominated insurgency so that American and other foreign troops can begin to go home next year.

However, the perception that the Shiites and Kurds rammed through a document unacceptable to the Sunnis could produce a backlash among Sunni Arabs and sharpen religious and ethnic tensions.

Although the constitution requires only a simple majority in the referendum, if two-thirds of the voters in any three of Iraq's 18 provinces vote against it, the charter will be defeated. Sunni Arabs are about 20 percent of the national population but form the majority in at least four provinces.

The deadlock on the constitution came as Shiite leaders called for an end to fighting between rival Shiite groups, and police found the bodies of 36 men, bound and shot in the head, near the Iranian border — apparent victims of Iraq's worsening communal tension.

The violence was a clear sign of the need for a stable, constitutional government in Iraq — something all sides agree on. But a formula that pleases Shiites, Sunnis, Kurds and other groups has proven elusive.

Shiites and Kurds had accepted a draft on Monday but Sunni Arabs opposed it, and al-Hassani had granted three more days to try to bring the Sunnis on board.

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TO



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Base MSRP  
Employee price  
Cash allowance

Employee price  
after cash allowance

RECEIVED

SEP 12 2005

DNR-WOR

SEE YOU

\*At participating dealers on  
pricing and financing details  
dealer stock

Marshfield News Herald

8-26-2005

edin  
P.O. Box 67  
W 54437  
9  
24-31-7

### District of Loyal Board Meeting ye 15, 2005

sent: J. Campbell, D.  
L. Mahoney, C. Rueth

sent: P. Brostowitz  
tors present: D.  
aters, G. Williams  
it: Katie Weiler arrived

otion to adjourn open  
nvene into executive  
Wisconsin Statutes  
[e] to discuss matters  
nel was made.  
Brcstowitz - absent.  
; Clouse - yes; Loos  
- yes; Rueth - yes;  
ix - yes and one -  
carried.  
the Board adjourned  
n and reconvened into

## CE

### RECLAMATION PLANS

l Zoning Department  
n a nonmetallic mine  
Rules for nonmetallic  
strative Code. The rule  
Department and Clark  
e reclamation of land  
ced after Aug. 1, 2001.  
(ts), clay (cl), sand (s),  
other mining activities  
measures may include  
land (fl), or other (ro).  
ndowners adjacent to  
ic mine may request a  
g-related hearing. The  
sted below is available  
reclamation plan has  
ocation (parentheses  
se):  
e railroad right of way  
, o, rl, ro)  
d Clark County Land  
stimcny presented (if  
as the right to make a  
d for the nonmetallic  
nctact the office listed

approve M & I Bank for another three  
years. On voice vote with Campbell  
abstaining; 5 -yes, motion carried.

Review/take action: Revised water  
bill for 2003-05. The additional water  
bill totaled \$5,888.86 after 10 percent  
discount. A motion to rescind the  
motion made at last month's meeting  
to only pay \$4,000 was made by  
Clouse, seconded by Weyer. Motion  
passed on voice vote with Loos voting  
no. A motion to pay the city the full  
\$5,888.86 was made by Clouse,  
seconded by Mahoney. Motion passed  
on voice vote with Loos voting no.

Hire: Swimming bus supervisor. Kris  
Anderson was hired as the swim bus  
supervisor at a rate of \$7.25 per hour  
on motion by Campbell, seconded by  
Loos. Motion carried.

#### New business:

Accept: Resignations. A resignation  
from Joan Oestreich as a special  
education aide was accepted with  
regrets on motion by Loos, seconded  
by Clouse. Motion carried on voice  
vote with Mahoney abstaining. A  
resignation from 5-12 band teacher  
Matt Nevers was accepted with regrets  
on motion by Clouse, seconded by  
Loos. Motion carried.

Hire: 7-12 Spanish teacher. Alyssa  
Woods was hired on a 1-year contract  
as a 7-12 Spanish teacher intern  
pending DPI approval on motion by  
Loos, seconded by Campbell. Motion  
carried. She will be replacing Robin  
Schermetzler who will be taking a 1-  
year leave of absence. Social studies  
teacher. David Fjelstad was hired as  
9-12 social studies teacher to replace  
Mike Nanstad on motion by Campbell,  
seconded by Loos. Motion carried. He  
is a recent UW-La Crosse graduate  
and will be placed at 1BS on the  
pay scale. Administration is currently  
interviewing applicants for the 5-12  
band position.

#### Approve:

Revisions to 2004-05 Budget.

Dates of summer school, swimming  
lessons, and the summer rec  
program.

High School Principal Oldenberg  
reported:

The senior class had their class trip  
on May 20.

50 students participated in  
graduation ceremonies on May 28.

Jr. and sr. high awards day was  
May 31.

The softball team finished the year  
with a ECC championship, regional  
championship, and a 18-2 record.

Jr. high students participated in  
the REACH trip to Wisconsin Dells; 93  
students went.

The end of the year and semester  
exams are completed. Report cards  
have since been made available.

The summer sports camps and  
open gyms have started.

Congratulations to Ross Mahoney,  
who qualified for sectional golf  
competition.

#### Administrator Williams reported:

Mr. Williams discussed with the  
Board the consolidation, feasibility  
study with Greenwood. He notified the  
Board that Granton is also interested in  
joining in with the feasibility study. The  
Board discussed the various scenarios  
in regard to the consolidation study.  
It was decided to tell the Greenwood  
School board that certain decisions  
must be made prior to the study being  
initiated. Mr. Williams was to contact  
Mr. Eitenmiller from Greenwood to set  
up a joint meeting date.

The school district has increased  
its medical expense option under the  
flex spending accounts to \$5,000.  
This should help some staff members  
take advantage of the flex spending  
accounts.

The interest rate for the money  
market account for June was 3.15  
percent.

Mr. Williams will meet with Branstiter  
Bus Company to discuss the 2005-06

Chippewa Valley Sports	516.00
Hewlett-Packard Corp.	1,210.00
Hewlett-Packard Corp.	15,000.00
Northern Music Service	469.45
Paul Bugar Trucking	4,179.00
Quill Corporation	130.18
School District of Loyal	320.00
Greenwood Bus Service	36,206.95
CESA No. 10	6,497.03
Domine Chevrolet Co.	263.50
Dept. of Public Inst.	1,269.10
Johnson, Maxine	158.00
Mohr, Karen	158.00
Oldenberg, David	128.14
Power Pac Inc.	1,799.00
Reckner, Dale	115.20
Colby School District	535.38
Onyx Waste Svcs. Midwest	380.80
THC Controls	1,500.00
Tribune-Record-Gleaner	523.06
Verizon North	625.16
WAAE	370.00
Williams, Graeme	136.25
XCel Energy	4,393.39
Awards by G & D	105.75
Baraboo Sysco	2,580.43
Benefit Design Group	115.50
Beaver Creek Reserve	253.00
Brenner Oil Co.	176.16
C & J Auto Supply	233.72
CTL Company, Inc.	7,296.95
EFT	35,306.00
Follett Library Book	1,592.16
Greenwood IGA	182.19
Loyal Farm & Home	1,456.43
Harkers Distribution	1,533.09
Hillers True Value	227.24
J. H. Larson Co.	713.73
Loyal Food Service	722.80
Lutheran Social Service	1,610.00
M & I Bank	403.27
Morning Glory	2,597.85
N T C.	4,157.40
Office Max	183.94
Pan-O-Gold Baking Co.	304.84
J. W. Pepper & Son	310.70
Power Pac inc.	523.17
Recorded Books, LLC	787.82
Riverside Dairy	446.57
Eau Claire School District	319.80
Wis. Retirement System	29,659.30
Teacher's Video Co.	100.62
Wis. Dept. of Revenue	7,173.82
WPS Energy Services	2,266.94

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4001, Eau Claire, WI 54702. Telephone: 715-839-3824.

E-mail: eileen.kramer@dnr.state.wi.us.

## INVITATION FO

The Clark County Forestry and Parks Comm  
Department of Natural Resources, will accept qu  
stand improvement (release thin young oak an  
cutter) on 16 tracts totaling 384.81 acres. Tract ma  
available from the Forestry and Parks office, 517  
715-743-5440.

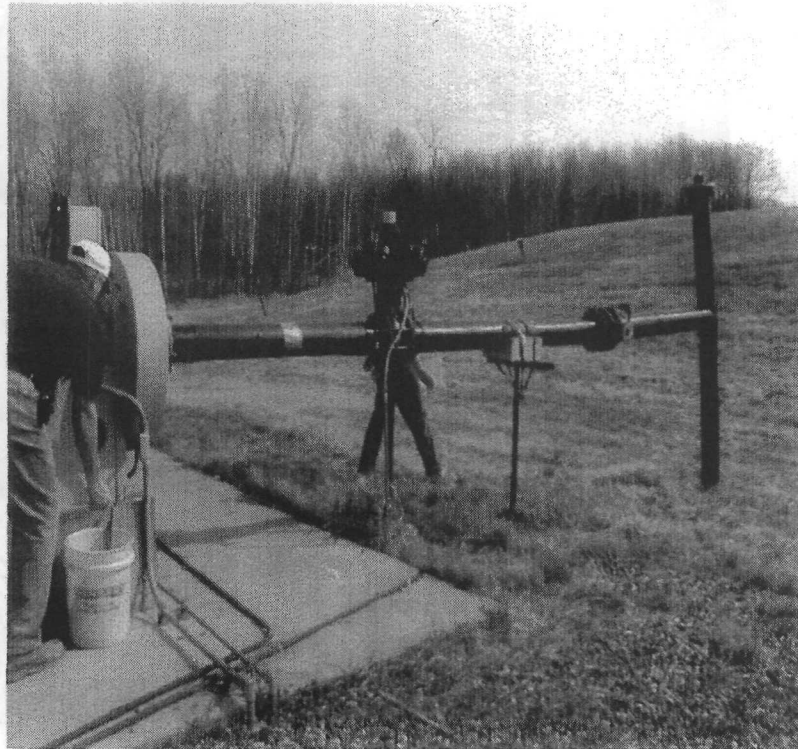
Quotes are due at the Forestry and Parks office  
Friday, Sept. 9, 2005. The Forestry and Parks Co  
to reject any and all quotes, to waive informalities,  
in the best interest of Clark County.

Natural Resources

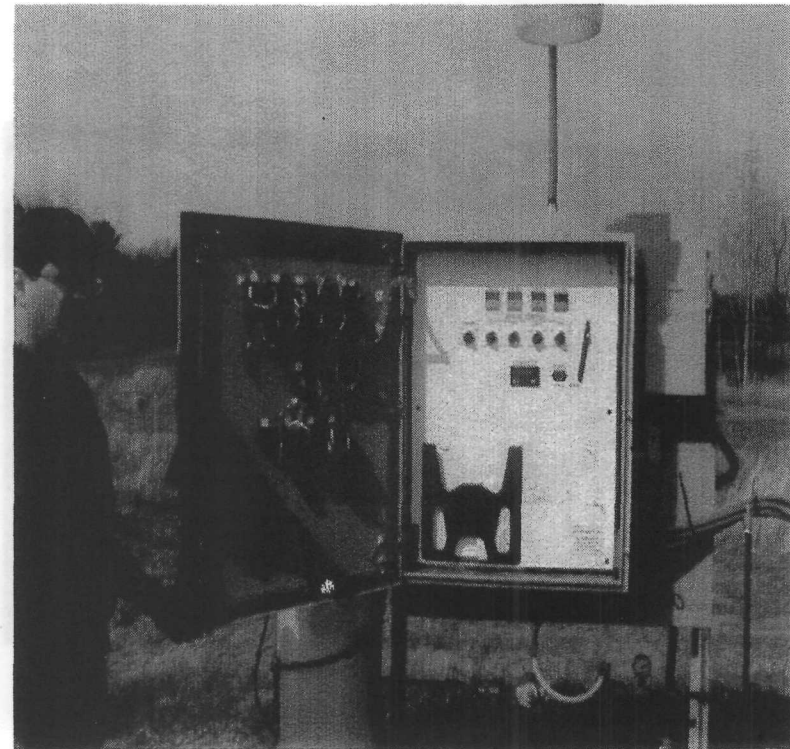
Tribune Record Gleaner  
8-31-05

## **Photos Documenting Site Conditions**

## Spickler Landfill -- April 19, 2005



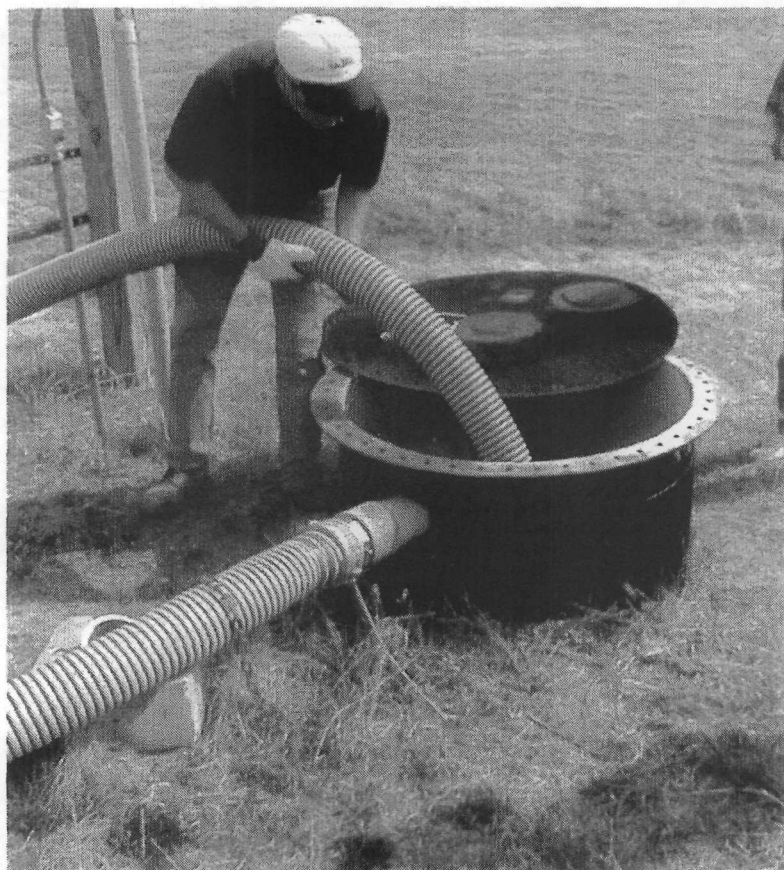
Facing east -- Gas extraction system blower and header: blower unit at far left; gas activated actuator valve at center; manual header valve at center right; condensate knock-out header at far left.



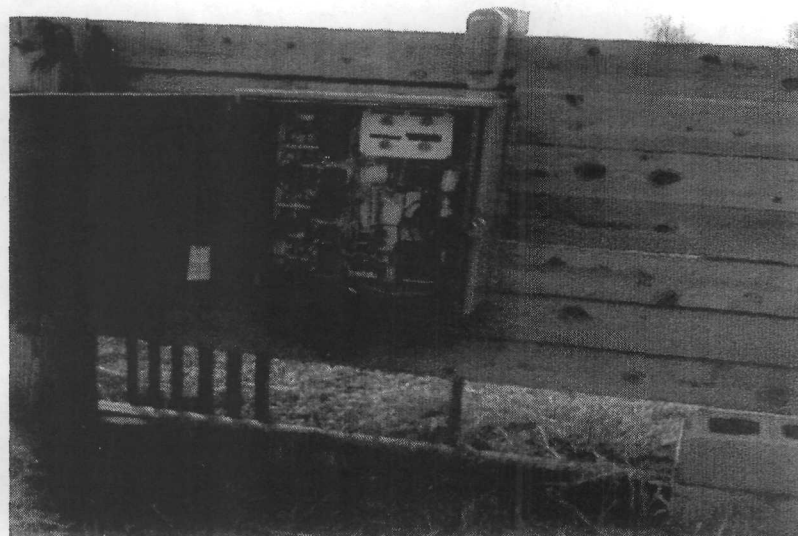
- Facing west -- Gas extraction system control panel for candle stick flare; shown are timers and controls for operation under intermittent or off-gas flaring modes.



## Spickler Landfill -- April 19, 2005



Leachate collection tank: 25000 gal. underground tank; demonstration of load-out pump operation. Load-out hose looped back into tank.



Leachate collection system control panel #2 at southeast corner of site.

Spickler Landfill -- April 19, 2005

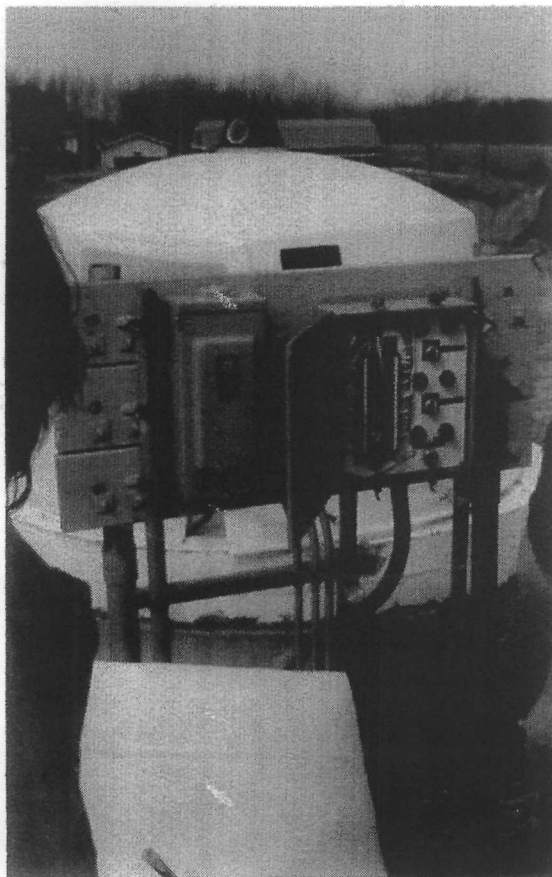


Facing east -- Gas extraction trench header #1: vacuum distribution header, riser, & manual valve at left, and HDPE trench header at right.



Lift station #1: Southwest corner of Old Fill Area mound; automated leachate system actuator valve control units on exterior of lift station cover, within enclosure. (Door removed) Valves are associated with forcemain discharge to collection tank and gravity inflow collection lines.

## Spickler Landfill -- April 19, 2005



Remote control panel at lift station #1; manual control switches, indicator lights for automated actuator valves.



East-west ditchline at southern boundary of Fill Areas; erosion matting and new vegetation from 2004 repairs. At left is site security fencing along southern property boundary.